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National Agricultural Research and Extension Users Advisory Board

Appraisal of the Proposed 1992 Budget for Food and Agricultural Sciences

Report to the President and Congress

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February 20, 1991

The President
The White House

Dear Mr. President:

The Congress created the National Agricultural Research and Extension Users Advisory Board in 1977 to advise the Congress and the Executive Branch on agricultural science and education issues. It is our pleasure to transmit this report, entitled "Appraisal of the Proposed 1992 Budget for Food and Agricultural Sciences," to you and the appropriate committees in the U.S. Congress.

This mandated report reflects the Board's independent assessment of Federally funded programs; our commitment to a sound economy and adequately funded research and extension; and the belief that agricultural science and technology can be used to expand markets, reduce production costs and, therefore, enhance profitability for farmers and ranchers while at the same time reducing the subsidy burden on taxpayers. We thus are in general agreement with the proposed budget and submit these recommendations to bring a user's perspective to those who must address the critical issues facing agriculture.

Sincerely,

Jane Anderson
Chairman

William Brundage
Vice-Chairman

National Agricultural Research and Extension Users Advisory Board

Appraisal of the Proposed 1992 Budget for Food and Agricultural Sciences

Report to the President and Congress

This report has been prepared by an independent advisory board and does not necessarily reflect the opinions of officials of the United States Department of Agriculture.

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UAB Recommendations: A Call for Action

In reviewing the proposed FY 1992 budget for Food and Agricultural Sciences, the Users Advisory Board (UAB) is pleased to note that the Administration has placed budgetary emphasis on investing in the future. We realize the current need for fiscal restraint has made this an especially difficult time to make decisions on spending priorities.

The UAB would like to point out that agricultural science and education play a critical "futuristic" role by helping American agriculture compete in an ever-expanding global marketplace. Science and education also play a vital role in addressing the growing concerns about food safety, water quality, and environmental protection.

The members of the UAB are increasingly concerned about the perception that all is well with American agriculture. The idea that our agricultural community is strong and profitable without exception is not only false, but dangerous. It is fostering a false sense of security, and consequently insufficient attention is being paid to the very real needs of our agricultural community.

Lack of Profitability. It is the Board's feeling that the long-term profitability of agriculture—and its capacity to provide returns to management, labor, and capital—is regrettably not one of the objectives of current national policy. We strongly support assigning a higher national priority to long-term Federal policy strategies for agricultural well being, and urge the Administration and the Congress to examine their priorities accordingly.

The UAB fears that current Federal policies may actually be contributing to the economic difficulties being experienced by farmers and producers. We recommend that, as part of its ongoing mission, the USDA (and ERS in particular) assess the effect of government policies on farm profitability and competitiveness. In addition, we ask that available economic data be reported by both commodities and regions of the country in order to identify specific areas experiencing economic decline.

We also recognize the need for American consumers to become more aware of and sensitive to the significant role agriculture plays in our national economy—besides being the obvious source of our food. Better communication by the USDA about

the situation facing many American farmers is needed to ensure that complacency does not adversely affect Federal policies necessary to assure long-term agricultural profitability.

While the UAB generally supports the Executive budget proposals, we have made suggestions for: (1) the best ways to use the proposed funds; (2) ways to shift funds between categories to allow USDA to better set and achieve research and education priorities; and (3) increasing the budget request when priority projects were omitted or underfunded. In keeping with our understanding of the need for fiscal restraint, we have asked for very few increases.

The section below summarizes our review of the proposed USDA agency budgets. It is followed by our detailed appraisal of and recommendations for the proposed FY 1992 budget for the Food and Agricultural Sciences.

Agricultural Research Service (ARS). The UAB endorses the level of additional funding in the proposed Executive budget for ARS, with only one minor reduction. We feel that this support, when combined with the National Research Initiative (NRI), will enable ARS to effectively address priority programs.

The UAB believes that ARS could benefit across the board by committing the agency to a total quality assurance program similar to those developed by experts such as W. Edwards Deming. In addition, we recommend that ARS consider examining and adopting the standards of project excellence used by the Department of Commerce in making its Malcolm Baldrige awards.

The Board also believes that proper use of the 6-year strategic plan—coupled with good economic impact analysis—could greatly increase ARS successes. Overall, we recommend that ARS take the following actions:

- Initiate a total quality assurance program for the agency.
- Emphasize a rolling 6-year strategic plan, and include a longer range facility plan. This strategic plan must emphasize improvement in profitability, efficiency, and competitiveness of American agriculture.
- Consider technology transfer in all stages of planning and execution of research programs.

- Clearly define who the "customers" are and what the products of research projects will be *prior* to initiating said projects.
- Place emphasis on patenting products and processes, and install priority systems for patent filings, both domestic and foreign.
- Ensure the best use of resources through interagency, interdisciplinary, peer-reviewed research.
- Provide a succinct economic-impact statement for all major research programs, in conjunction with ERS.
- Emphasize alternative agriculture and value-added projects that fit the strategic plan.
- Support plant genome research and aggressively manage germplasm collection.
- Ensure that research will develop effective agricultural management and production strategies compatible with protecting water quality.
- Strive to understand the cause-and-effect relationship between climatic changes and agriculture.
- Develop and implement standards of operation for ARS research facilities. These standards should be spelled out in the ARS 6-year strategic plans, but preferably with a 10- to 15-year outlook. New facilities should *not* be built unless a comprehensive review shows that cost savings would result.

The discussion beginning on page 12 examines each of these issues in greater detail.

Cooperative State Research Service (CSRS). A number of significant changes have been proposed in the President's FY 1992 budget for CSRS. Despite the limits of zero-based budgeting, the Administration has—as promised last year—proposed a total of $125 million in the NRI. We applaud the President's continued commitment to the NRI. The UAB believes that two new areas of research should receive greater emphasis in the initiative: (1) processes and new products; and (2) markets, trade, and policy.

The Administration also proposes committing an additional $25 million to fund renovation and construction of university research facilities through competitive grants on a matching basis. The UAB supports this proposal; we believe it is important to promote modernization of research and research-training facilities. We ask, however, that special consideration be given to 1890

institutions in an effort to support the Centers of Excellence objectives recommended in our report last year.

While the UAB is pleased with this effort to shift the allocation of funding for agricultural research facilities to a system based on merit and need, we caution that the procedures for this new system have not yet been finalized. The first steps have been taken toward developing these procedures, but important questions remain to be answered about how these funds will be distributed.

The President's proposed budget for CSRS indicates the Administration's growing awareness of today's agriculture needs, as demonstrated by increased funds in the areas of food safety and water quality. The UAB supports these program increases. The Board also supports the 14 percent cap placed on overhead costs that universities can recover from competitive research grants.

In addition to the above comments, the UAB wishes to make the following recommendations:

- Congress and Administration should make appointments to the Agricultural Science and Technology Review Board, established by the 1990 Farm Bill. Primary responsibility should be to advise the Secretary on the NRI.
- Funding should be increased for programs to recruit minorities and women to agricultural sciences, and to commercialize agricultural products that have been funded through earlier research.
- The Commission on Agricultural Research Facilities should be quickly assembled and its recommendations made available by the Congressional deadline.
- $5 million in additional funding should be included under Federal Administration for Capacity Building Grants at 1890 institutions.
- Science education should be made a national priority. The UAB reluctantly accepts the President's proposal of $5.5 million for higher education, but we wish to restate our strong belief that science education is critical if we are to retain our leadership position in agriculture.
- $2 million should be added under Special Research Grants to fund Biodiesel research. Biodiesel has been shown to have physical and combustion properties comparable to

petroleum diesel, but with superior environmental characteristics.

- $5 million should be added to Supplemental and Alternative Crops in order to initiate the Alternative Agricultural Research and Commercial Act. The UAB supports funding for critical materials research that shows promise for commercial applications, such as polymer research.

Detailed discussions of these and other recommendations can be found in the section beginning on page 21.

Economic Research Service (ERS). While the ERS budget has been nominally increased over the years, appropriations have not kept pace with inflation. The ability of ERS to provide economic research and analysis on all requested issues is directly related to provision of sufficient funding to attain timely and reliable data and analysis.

The funding level recommended in the President's budget addresses the agency's role in the national initiatives for food safety, water quality, and global change, but does *not* adequately fund base programs. While the UAB feels that more money is needed, we also recognize the need for fiscal restraint and accept the President's proposed funding of $62.479 million

The UAB disagrees with the current perception that American agriculture is healthy. The long-term profitability of agriculture—and its ability to provide returns to management, labor and capital—is not one of the objectives of current national policy. We ask that ERS, as part of its ongoing mission, assess the effect of Government policies on farm profitability and competitiveness.

In addition, to provide a truer economic picture of American agriculture, the Board believes that ERS should, in its evaluation of available data, report by both commodities and regions of the country. This would make it easier to identify and respond to specific areas that are experiencing economic decline.

The UAB is concerned about the effects of multiple levels of regulation with respect to both food safety and water quality. We recommend that appropriate laws contain strong preemptive language designed to prevent inconsistent application of standards. Further, as explained on pages 33-38, the ERS should:

- Conduct additional marketing research to determine the eating habits of consumers worldwide, and release the results in a timely manner.
- When discussing food safety, the Board asks that ERS avoid criteria that would define "safe" as biological rather than chemical, and natural as opposed to synthetic.
- Consider the impact of the "Circle of Poison" on farmers, manufacturers, distributors, and consumers. Particular attention should be paid to the problem of importing foods from countries that use pesticides which have been banned from use in the United States.
- Assess the impact of the Water-Quality Initiative on production costs, in addition to reviewing environmental considerations.
- Perform continuous analysis of the effect of the following on U.S. agriculture: (1) greater global trade protectionism; (2) changes in Eastern European economies; (3) economic implications of a U.S.-Mexico free-trade agreement; and (4) impact of the U.S.-Canadian free-trade agreement.
- Assess the impact of the continuing loss of pesticides for minor use crops.

Cooperative Extension Service (CES). The UAB applauds the new direction taken by CES in the past 3 years toward issue-based programming and strategic planning. By identifying critical issues, CES will be able to make a greater impact on the problems generated by changes in the global economy, our environment, U.S. demographics, and more.

Overall, the Board is pleased with the total funding level proposed for CES in the President's budget. However, we have recommended some shifts in funding areas to more specifically target the long-term priorities emphasized by the UAB.

The most important change we have recommended involves the Expanded Food and Nutrition Education Program (EFNEP). While we believe that EFNEP has improved the nutritional practices of those it has served, we remain concerned about the imbalance between the growing magnitude of the problem and the scope of the program to address it.

For these reasons, we urge Congress and CES to reevaluate the EFNEP program in terms of total basic-life needs of

low-income groups, and to consider ways for integrating the program funds and personnel into the broader based CES programs. Overall, our recommendations for CES are as follows:

- Funding should be removed from the proposed FY 1992 budget line dedicated to EFNEP, and instead Smith-Lever 3(b) and (c) funding should be increased by $30.262 million. By leveraging these funds with State and private-sector money, EFNEP can still access funding equal to the FY 1991 appropriation.
- An additional $6.373 million should be added to Smith-Lever 3(b) and (c) programs to further facilitate the integration of EFNEP into the overall CES programs.
- An additional $3 million should be included for Farm Safety programs under Smith-Lever 3(d), to be awarded through a competitive grant process.
- The Board supports the President's budget request for $2 million to fund education in food safety and quality. The CES network of professionals is a vital resource for disseminating unbiased information on food safety.
- $15 million should be added to fund Rural Economic Development programs. The UAB believes that the CES has special expertise vital to carrying out the President's Rural Economic Development Initiative.
- $1 million should be included to fund the five Regional Rural Development Centers. The Board believes funding for these centers should be continued while awaiting the results of an intensive review scheduled for later this year.
- The Board fully supports the President's proposed $7.5 million increase in funding for the Youth-at-Risk program.
- An additional $3 million should be included to fund the Renewable Resources Extension Act. The Board believes this program is a cost-effective system for transferring technology to private forest and rangeland owners.
- Funding for the following programs should be continued at their proposed level: (1) 1890 Colleges and Tuskegee University; (2) 1890's Facilities Grant; (3) D.C. Extension; and (4) Federal Administration.

For further details about these and other recommendations, turn to the section beginning on page 39.

Forest Service Research. For almost a century, the Forest Service has conducted research at field stations, experiment stations, and the Forest Products Laboratory. The UAB strongly believes that such research should be funded at levels that will provide for increased productivity of all forest uses. The public is demanding environmental quality, economic growth, and international cooperation. In many cases, trees are the answer.

While the UAB believes that the President's "America the Beautiful" initiative is bold and recognizes the importance of trees to our society, we wish to repeat last year's recommendation that funds for forest entomologists, pathologists, and fire scientists be provided out of funding allocated for this initiative.

The foundation of the Forest Service Research program is ongoing, long-term research. Because it takes many years for trees to grow and for ecosystems to manifest changes, research activities must consistently be funded at a level that provides continuing study and tracking of changes. The UAB believes it is short-sighted and wasteful to abandon research—in which large amounts of time and money have been invested—before the work has been completed.

After reviewing the proposed FY 1992 budget for Forest Service Research, the UAB wishes to make the following observations and recommendations:

- The U.S. Forest Service is to be commended for initiating a strategic planning process.
- Funding for foundation programs should be continued at levels equal to FY 1991 appropriations.
- While the *new* priority problems contained in the FY 1992 budget proposal (such as tropical forestry research and the like) may have merit, the UAB believes they would stretch the nation's resources beyond what we consider to be prudent.
- Additional urban forestry research is needed to support effective management of the "America the Beautiful" program, but the UAB believes that funding for this research should come from the base initiative.
- Funding for Forest Management Research should be increased by $3 million. We applaud the shift in emphasis toward examining the responses of ecosystems to management.

- An additional $1.4 million should be added under Forest Products and Harvesting Research to fund recycling research. The Board strongly supports recycling of paper and wood waste discarded by consumers.
- We recommend an increase of $3 million to support basic Forest Environment Research to determine the relationship between forests, water quality, plants, and wildlife populations.

Detailed discussions of these and other recommendations can be found in the section beginning on page 47.

Human Nutrition Information Service (HNIS). HNIS monitors the marketplace for changes in consumer eating patterns and attitudes, and analyzes foods for nutrient composition. The resulting database provides the most complete picture of foods and nutrients available for consumption, and records the actual quantities of nutrients consumed by individual Americans. Thus, HNIS provides the bottom-line information needed to gauge Federal action in ongoing and newly legislated programs.

Although the FY 1992 budget request for HNIS has been increased, the request does not include adequate funds to maintain the ongoing database. In addition, recent legislation has broadened the HNIS mandate for collecting data, and includes requests to research the dietary habits and needs of many subset groups as well as the general population. The UAB believes that HNIS should be funded at levels sufficient to maintain its database relevancy and to handle new program thrusts.

In addition to the above observations, the Board would like to make the following recommendations and comments:

- Funds within the FY 1992 Presidential budget should be directed to maintenance and expansion of the HNIS database.
- HNIS is to be commended for its adoption of the Management by Objectives (MBO) system, which will facilitate improved annual and long-range planning.
- HNIS has cited difficulty in implementing the phased-research method for tracking new population groups and the foods they eat. The UAB would like these efforts to continue, and strongly believes this method can work if given sufficient time and funding.

- The UAB continues to believe that most agencies would benefit from coordinated programming and leveraged funds. While many agencies do not recognize their interdependence on a small agency like HNIS, they use HNIS data as the foundation for setting priorities, building programs, and determining program strategies.
- The UAB is pleased to see the new focus targeting health educators, who can communicate nutrition education information to a wider audience of Americans. We believe that additional funding to increase the impact of such programs should come from the agencies involved in disseminating this information to the public.

For further information about these and other recommendations, turn to the section beginning on page 52.

Office of International Cooperation and Development (OICD). The role of OICD is critical in keeping U.S. agricultural technology competitive on a global basis, for increasing U.S. agricultural exports, and in helping to increase income and food availability in developing countries.

OICD programs have become even more important due to the Administration's increased geographical focus on the Soviet Union, Eastern and Central Europe, and Latin America. OICD can provide valuable linkages for U.S. scientists in many areas, including the acquisition of germplasm, protection of U.S. agriculture from foreign pests and diseases, a greater understanding of agriculturally related environmental concerns, and increased utilization of U.S. agricultural exports overseas.

The 1990 Farm Bill contains authority for the Secretary of Agriculture to receive local currency repayment for new Title I sales, and to use those local currencies to fund collaborative research and short-term scientific exchanges. Unfortunately, there are no guarantees that these monies will be available when needed or in sufficient amounts. The UAB asks for an appropriation of $2.4 million to fund this program.

In reviewing the FY 1992 proposed budget for OICD, the UAB wishes to make the following comments:

- OICD should continue to conduct peer reviews of international research and exchange proposals before funding them, based on three criteria:

(1) The accrual of benefits to U.S. agriculture;

(2) The soundness of the scientific approach; and,

(3) Consistency with U.S. agricultural research priorities.

- The UAB recommends funding short-term scientific exchanges and collaborative research efforts, and asks for $2.4 million to fund this program.
- The UAB recommends an appropriation of $2 million to fund the Foreign Currency Research Program. Purchase of foreign currency is needed to continue important programs in Taiwan and Yugoslavia, such as crop genetics, DNA probes, and ground-water protection.
- The UAB is pleased to note that a series of workshops is being set up for Eastern Europe in the areas of ground-water protection, integrated pest management, soil erosion, and effects of acid precipitation and global change. These workshops will not only assist East Europe, but also result in information, data, and research useful to U.S. agriculture.

Further discussion of these and other recommendations is included in the section beginning on page 59.

National Agricultural Library (NAL). As one of three national libraries, the NAL serves as a vital resource for the collection and dissemination of information on all aspects of agriculture. In its FY 1991 Budget Appraisal, the UAB recommended that NAL be allowed to charge a fair market value for some of its services. We are gratified to note that the 1990 Farm Bill authorizes NAL to recover the cost of services. We hope this new revenue source and other funds will help pay for the upgrade and expansion of NAL programs and services.

In the reality of fiscal limitations, the UAB agrees with the President's funding request of $17.453 million for NAL. We note, however, that networking, salaries, and some facility improvements are the only expenditures covered by this modest $1.08 million increase.

The Board is pleased to learn that NAL is discussing last year's recommendation to publish a 5-year rolling plan with explicitly stated priorities and required resources. We are also happy to hear that NAL will pursue the creation of a software program similar to the National Library of Medicine's "Grateful Med."

When additional resources are available, the UAB believes that the following programs should be given funding priority:

- Establishment of a National Rural Information Center Clearinghouse in conjunction with the Extension Service, as authorized in the 1990 Farm Bill.
- The Biotechnology Information Center at NAL should be promoted as the preeminent source for information in the field. In addition, biotechnology networking capabilities should be expanded in the Midwest and in other geographic areas.
- Funding should be provided to fully upgrade the integrated library system at NAL so more users will have access to a larger portion of the NAL database without having to go through commercial vendors.

Further discussion of the NAL budget and UAB recommendations begins on page 62.

Agricultural Research Service (ARS)

In stating our support of the proposed FY 1992 ARS budget, the UAB asks that ARS consider adopting a total quality assurance program similar to those developed by experts like W. Edwards Deming. Such a program could help ARS make maximum use of its resources, target its "customers," and facilitate establishment of criteria for scientific, physical, and human resource goals critical to the preeminence of U.S. agriculture. In addition, we ask that ARS consider examining and adopting the standards of project excellence used by the Department of Commerce in making its Malcolm Baldrige awards.

Strategic Planning. The UAB commends the ARS on its effective use of comprehensive, long-term planning. We continue to advocate that each ARS plan be given wide distribution to the agricultural community. In addition, a summary version of each plan should be prepared for the public to clearly explain the purpose and method used to achieve research results.

We believe that the 6-year time frame for research planning is adequate, but recommend that a longer planning period be applied to activities relating to research facilities. This would allow ARS to take advantage of opportunities for increasing efficiency

through consolidation, and to anticipate modernization and maintenance requirements.

The UAB applauds the integration of human resource needs into the ARS long-range plan. Training and recruiting minorities and women in agricultural sciences is crucial if the ARS is to provide the skills necessary to fulfill its mission.

As pressure grows to focus more on water quality and food safety, the Board urges ARS to continue emphasizing efforts to improve the efficiency, profitability, and competitiveness of American agriculture. A balance must be struck between the overall goal of improving American agriculture and the need to address specific problems. We believe the long-range plan is a critical tool for achieving this balance.

Technology Transfer. ARS must transfer the knowledge and technology derived from its research in a way that is useful to American agriculture. The Federal Technology Transfer Act of 1987 has been constructive in facilitating this transfer, and ARS has made effective use of this tool. The UAB recommends a continued, aggressive effort to position technology in both the private and public sectors.

Technology transfer is not a single, "throw-it-over-the-wall" step that can be taken at the end of a research program. Its principles must be integrated into every stage of a research program—from inception to execution. This means clearly defining in advance who the customer is for a specific project, and what that customer's requirements are for success. The UAB recommends that reviews of research progress include verification of whether or not the program still meets the requirements for successful technology transfer.

The Board also recommends that ARS continue to strengthen its efforts to add value to the products of its research program by obtaining patents. Clarification of the process for obtaining patent protection within the United States and in foreign countries is needed. A priority-setting system to determine which cases were filed first would also be useful.

Technology transfer can result from a "push" of technology from a research organization, or a "pull" from a customer with an unmet need. Historically, the ARS has worked to push

technology out. The Board recommends that efforts now be made to identify and respond to pulls from ARS customers.

Interdisciplinary, Interagency, Collaborative Peer-Reviewed Research. The UAB believes that ARS should continue to increase its use of: (1) interdisciplinary research teams; (2) interagency cooperation; and (3) external peer review of its research efforts. In addition, ARS should continue to use multidisciplinary and widely dispersed research teams to address critical national problems.

ARS should initiate information exchanges across a broad range of disciplines and organizations, and capitalize on existing research results. The UAB strongly recommends that ARS research projects make use of similar efforts taking place both inside and outside the USDA whenever possible.

Technology transfer, water quality, and plant genome research are just a few examples of efforts that can benefit from strong interagency cooperation and communication. Foreign animal diseases and food safety issues are still others. APHIS and FSIS are involved in disease and food. Safety has generated cooperative efforts, as has NIH funding. The techniques and tools used in NIH-funded programs are similar, so cooperation is imperative.

With budget shortfalls, available funds should only be allocated for research programs of high national priority or extraordinary regional importance. The UAB urges mandatory peer review of ARS programs. External and internal peer reviews help ensure that only high-quality and much-needed research programs are funded. Such reviews also help ensure ongoing improvement in problem-solving programs, and assure that all research is based on the best possible science.

Economic Impact Analysis. The UAB recommends that the Economic Research Service (ERS), in conjunction with the ARS, provide a succinct economic-impact statement for all major research programs, starting with new initiatives and extending to all proposed projects. Such a requirement would mean that funding decisions could be made with prior knowledge of the potential effect that research results could produce on the marketplace. It would also set a standard against which those effects could be measured. The Board recommends that ERS

personnel be deployed to ARS sites, when appropriate, to accomplish these ends.

The proposed ARS project to explore and develop agricultural uses for gypsum and associated residues appears to be an excellent candidate for such an analysis; a large database already exists and could be used to assess the economic viability of the project.

Research Into Alternative Uses of Agricultural Products. The UAB encourages a continued search for value-added alternative uses for agricultural products. In addition, the Board believes that finding new uses for agricultural raw materials should become a national priority. Research and development in this area should be evaluated to ensure an overall net gain to agriculture.

Agricultural commodities used as industrial feedstock should *not* compete with foodstock availability or with reserves. Food shortages have historically been a result of distribution policy decisions and economics.

Numerous plants show promise for commercial production of industrial products, but are not yet commercially available. The ARS should work to develop new uses for agricultural products that can provide the base for viable, new industries. Such work involves research and cooperation between the public and private sectors. The transition from basic research (creation of a technology) to the marketplace is complex; market needs should dictate the transfer.

The UAB recommends that efforts should also be made to accomplish the following:

- Bridge the gap between research and commercialization;
- Use renewable resources as industrial materials, and help industry adapt to these materials;
- Increase the use of agriculturally produced crops for industrial materials to diversify agriculture;
- Promote risk-sharing and pooling of resources;
- Reduce reliance on imports; and
- Make U.S. agriculture more competitive globally.

Food Safety. The Board has strongly supported efforts to ensure a safe food supply. Indeed, because safety is the issue, we urge the ARS to avoid criteria that would define "safe" as biological

rather than chemical, and natural as opposed to synthetic. All biological and natural materials are chemicals; a large and growing body of evidence suggests that "natural products," which are the more numerous, can be every bit as toxic as the most toxic synthetics.

Commodity Conversion and Delivery. The Board supports the proposed budget increase for ARS research on commodity conversion and delivery; we see opportunities to accelerate these efforts and decrease costs. ARS should collaborate with private companies and public agencies that have already developed good methods of analysis for pesticides and other potential food residues. Moreover, these methods are likely to be state of the art. Collaboration between interested parties should save considerable time and money.

Plant Genome Research/Plant Germplasm. Germplasm resources and collections are of vital interest to our nation's security and the future development of our food, fiber, and agricultural systems. The Board believes that plant genome studies could yield enormous benefits by increasing our understanding of plant biology and its effects on human nutrition. We strongly support studies and activities related to the management, use, conservation, accessibility, collection, patents, and ownership of germplasm and native biological diversity. The UAB believes that work on plant genome will gain significantly if USDA and NIH cooperate and fully exchange information on their respective plant and human genome projects.

The Board urges the Department to meet the challenge of the 1990 Farm Bill, which authorized the following: (1) expansion in the germplasm resources programs to include forest tree species, animals, fish, and microbial species; (2) adoption of the recommendations of the NRC report, especially with respect to the planned expansion of the National Seed Storage Laboratory at Ft. Collins, Colorado; (3) changes in the advisory structure; and (4) more active participation in international programs on the conservation of germplasm and biological diversity.

Water-Quality and Ground-Water Research. The UAB continues to support ARS responsibilities for water-quality and ground-water research. Concern continues to grow in many parts of the country that water quality and supplies are seriously

threatened, degraded, or nearly depleted by municipal, industrial, and agricultural chemicals; sediments; animal wastes; salts; and toxic substances.

The UAB also supports continued implementation of the President's Water-Quality Initiative of 1989. We believe this initiative contributes to ARS water-quality programs designed to increase compatibility among agricultural management practices, agricultural production, and environmental quality.

The UAB supports the expanded ARS effort to develop economically viable farming systems that protect the quality of drinking water. This effort is especially important in protecting the quality of underlying ground water by reducing the leaching of nitrates and pesticides. Techniques for absorbing nitrates in cover crops and preventing them from leaching during wet months warrant further investigation. Studies of rate and transport issues are also needed.

The UAB continues to encourage intra- and inter-agency coordination and cooperation on water-quality and ground-water research. Information networks should connect not only the various USDA agencies and state agricultural experiment stations, but also the USGS, NOAA, and all offices of the EPA.

Global Change. Global change, especially global climate change, will have a direct effect on agriculture and forestry, and, in turn, the national economy. Understanding interactions at the earth-system level is necessary before USDA can assess how environmental changes affect the quantity, quality, and stability of agriculture and forest production (as well as water supply) on a region-by-region basis. USDA should also assess and develop alternative production systems that can withstand stress and adapt to shifting temperature and moisture regions.

As part of the USDA Global Change Program, the UAB supports ARS programs that emphasize further development in understanding the carbon cycle and hydrologic processes related to: (1) predicting how agricultural management will affect the atmospheric composition of greenhouse gases; and (2) how potential climate changes will affect agriculture and forest productivity.

The UAB continues to recommend the standardized and coordinated development of reliable, agriculturally relevant

meteorological stations. These should collect long-term climate data in stable rural areas to expand current databases, which include data collected from urban "heat islands," such as airports.

A worldwide consensus now exists among scientists that significant global climate change may take place, and that long-term observations, research, and model development must continue in order to understand and meet the challenges that such changes may bring. USDA and American agriculture and forestry must be prepared to mitigate greenhouse gas emissions and adapt to global change—and to assume a leadership role in doing so.

The UAB endorses the establishment and adequate staffing of the USDA Global Change Program Office within USDA for policy, information, and coordination purposes. This office should issue an updated information bulletin similar to that being issued by the Water-Quality Working Group.

Improved ARS Research Facilities. We congratulate the ARS for accelerating improvement of the Beltsville, Maryland, facility, and express confidence that improvements will continue apace. The Board remains in total support of the maintenance and mission of the National Seed Storage Laboratory and is encouraged by specific upgrading of facilities as outlined in the budget.

The UAB believes it is now time for ARS to develop standards of operation for its facilities. Once these standards are in place, facilities that fail to meet them should either face closure or consolidation. Such standards would be spelled out in the ARS 6-year strategic plans, but preferably with a 10- to 15-year outlook. These plans should also include the amount of funding necessary to keep facilities of long-term importance in good repair. We continue to urge that new facilities not be added unless a comprehensive review shows that cost savings would result. The ARS and Congress should not continue adding new facilities when present facilities are not fully utilized. Further discussion of the importance of research facility evaluation appears on page 24, where the UAB recommends establishment and funding of the Commission on Agricultural Research Facilities.

AGRICULTURAL RESEARCH SERVICE:
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Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Soil & Water Conservation Programs	89,043	89,043	83,425	95,381	93,381
Plant Science	229,752	229,752	232,917	243,628	243,628
Animal Science	104,120	104,120	110,025	114,236	114,236
Commodity Conversion & Delivery	122,048	122,048	118,330	129,684	129,684
Human Nutrition	48,027	48,027	49,592	50,047	50,047
Integration of Agricultural Systems	12,228	12,228	11,505	11,860	11,860
Contingency Research	928	928	929	929	929
Repair & Maintenance	17,364	17,364	17,362	17,362	17,362
Buildings and Facilities	4,000[1]	4,000	3,000	1,800	1,800
(Construction)	16,000[2]	16,000	16,000	20,000	20,000
	2,500[3]	2,500	—	400	400
	10,100[4]	10,100	5,050	5,050	5,050
	—[5]	—	5,050	10,250	10,250
	—[6]	—	300	—	—
	—[7]	—	1,700	—	—
	—[8]	—	5,175	—	—
	—[9]	—	1,200	—	—
	—[10]	—	425	—	—
	—[11]	—	600	—	—
	—[12]	—	175	—	—
	—[13]	—	1,450	—	—
	—[14]	—	300	—	—
	—[15]	—	223	—	—
	—[16]	—	200	—	—
	—[17]	—	168	—	—

AGRICULTURAL RESEARCH SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992 *(Continued)*

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
	—[18]	—	—	6,000	6,000
	—[19]	—	—	2,600	2,600
Trust Funds	32,600	32,600	41,016	46,100	46,100
TOTAL	5,000	5,000	7,500	7,500	7,500
	661,110	**661,110**	**672,601**	**716,727**	**714,727**

[1] National Seed Storage Laboratory, Fort Collins, Colorado
[2] Modernization of Facilities, Beltsville, Maryland
[3] Poultry Disease Laboratory, Athens, Georgia
[4] Fruit and Vegetable Laboratory at Yakima, Washington (construction)
[5] U.S. Salinity Laboratory, Riverside, California
[6] National Animal Disease Center, Ames, Iowa
[7] ARS Bee Laboratory, Weslaco, Texas
[8] Center for Natural Products, Mississippi State, Mississippi
[9] National Center for Warm Water Aquaculture, Stoneville, Mississippi
[10] Plant Science Greenhouse Complex-NDSU, Fargo, North Dakota
[11] Plant Stress and Water Conservation Laboratory, Lubbock, Texas
[12] Northwest Small Fruit Center, Oregon/Washington/Idaho
[13] South Central Agricultural Research Center, Lane, Oklahoma
[14] Soil and Water Laboratory, Morris, Minnesota
[15] Rice Research Center, Stuttgart, Arkansas
[16] National Small Grains Germplasm Repository, Aberdeen, Idaho
[17] Columbia Basin Agricultural Research Center, Pendleton, Oregon
[18] Animal Disease Center, Plum Island, New York
[19] Modernization of ARS Facilities, Southern Regional Research Center, New Orleans, Louisiana

Cooperative State Research Service (CSRS)

Despite the limits of zero-based budgeting, a number of significant changes have been proposed in the President's 1992 budget for CSRS programs. Most importantly, the Administration has—as promised last year—proposed an increase of $50 million in the National Research Initiative (NRI) begun in FY 1991. The Administration also proposes committing an additional $25 million to fund renovation and construction of university research facilities through competitive grants to be awarded on a matching basis.

The UAB commends this effort to shift the allocation of funding for agricultural research facilities to a system based on merit and need. We caution, however, that procedures for this new system have not yet been finalized. While the Administration and Congress have taken the first steps toward developing these procedures, there are still important questions about how these funds will be distributed.

In addition to allocating new funds through these two programs, the President's budget for CSRS indicates a growing awareness of today's agricultural needs, as demonstrated by the increased funds in the areas of food safety and water quality. The UAB supports these program increases. We also recommend additional funds for programs to recruit minorities and women to agricultural sciences, and to commercialize agriculture products that have been funded through earlier research efforts.

National Research Initiative. Last year the UAB applauded the Administration's proposal to allocate $100 million in agricultural research through the new NRI system of peer review and competitive grants. For FY 1992, the Administration has continued its commitment to the NRI by proposing additional funding, for a total of $125 million to be allocated to six major program areas. The President's budget specifically recommends the following funding:

(1) natural resources and environment—$23 million;

(2) nutrition, food quality, and health—$13 million;

(3) processes and new products—$4 million;

(4) markets, trade, and policy—$2 million;

(5) plant systems—$53 million; and

(6) animal systems—$30 million.

The UAB believes every effort should be made to fully fund the NRI (for which $500 million was authorized in the 1990 Farm Bill) within the next 5 years to ensure that we obtain the most research for our limited funds. This approach will strengthen the overall quality of research, and also direct limited research dollars to specific priorities set by the Administration and Congress. However, base research programs should *not* be sacrificed to fund the NRI.

The UAB believes that the two new areas of research—(1) processes and new products, and (2) markets, trade, and policy—should receive greater emphasis in the NRI. U.S. agriculture needs research and development aimed at enhancing the value of commodities and improving its competitiveness. Funding should not be slanted toward production agriculture when our competitors are converting production to value-added products, and thus realizing the benefits of new jobs and economic development.

We are aware of the considerable controversy among the agricultural research community over the new mandate in Congressional legislation that imposes a 14 percent cap on overhead costs that universities can recover from competitive research grants. Some critics have suggested that universities may refuse to apply for grants under this approach. However, the UAB does not believe these fears are justified.

As noted in last year's report, an increasing percentage of "overhead" costs have been charged against Federal grants in recent years. Ultimately, the research program itself suffers. We support efforts to curtail the use of research funds for indirect administrative costs, and believe it is incumbent upon the research community to assist in finding ways to target the greatest amount of dollars possible for research efforts. While this may cause some hardship for certain grant recipients, we do not believe it will harm the NRI program. Surely a number of applicants will be interested in developing competitive grant proposals under the new guidelines.

The 1990 Farm Bill establishes an Agricultural Science and Technology Review Board. The UAB encourages the Congress and Administration to make appointments to this Board, and recommends that one of its primary responsibilities be to advise the Secretary on NRI policies, priorities, and operations. This assessment will enhance the NRI commitment to funding national priority research; provide equal opportunity to eligible and qualified institutions; ensure that each research project is selected on merit; and provide for timely peer review to assure scientific quality throughout the program. The Review Board should incorporate a broad consensus of researchers and the end-users of research, and should also include faculty from small schools and private universities that have not traditionally participated in USDA competitive grant programs.

Competitive Facilities Grants Initiative. In addition to its commitment of funds to NRI, the President's FY 1992 budget includes $25 million to be awarded as competitive grants, on a matching basis, to fund the renovation and construction of university research facilities. The UAB supports this proposal; we believe it is important to promote the modernization of research and research-training facilities.

The UAB asks that special consideration be given to 1890 institutions in an effort to support the Centers of Excellence objectives recommended in the UAB FY 1991 Budget Appraisal. In this report, the Board said that a major infusion of funding was needed because, in almost all cases, 1890 institutions are less qualified and under-supported. Since these schools are a traditional source of under-represented minorities trained in the food, agriculture, and natural resource sciences, the overall goal should be to create "Centers of Excellence" that attract a higher percentage of minority students to careers in agricultural science.

The Administration has stated its intention to increase funding annually for the Competitive Facilities Grants Initiative at a level equal to 20 percent of the NRI funds. This would provide a total of $100 million in competitive grant funds for facilities when the NRI is fully funded at its authorized level of $500 million. The UAB continues to support a competitive, merit-based approach to funding agricultural research facilities.

In 1989, at the request of Senator Patrick Leahy, Chairman of the Senate Committee on Agriculture, Nutrition and Forestry, the UAB issued a special report on the question of evaluating funds for Federal and university agricultural research facilities. During the 10 years prior to that report, and in the 2 subsequent years, UAB members traveled across the nation to visit and evaluate agriculture research facilities. These travels led us to suggest the establishment of a National External Peer Review Panel 2 years ago. This panel would make recommendations to the Secretary of Agriculture on funding research facilities.

The UAB is pleased to see that a study commission similar to the one mentioned above was adopted in the 1990 Farm Bill. The Commission on Agricultural Research Facilities has been mandated to conduct a comprehensive evaluation of agricultural research facilities, and to review plans for new construction, closure, consolidation, and reinvestment of existing facilities. The legislation requires the Commission to issue its report within 240 days of enactment. We understand that the Senate committee has made its appointments to the Commission, but that other appointments have not yet been made. It is imperative that steps be taken quickly to ensure that the Commission is fully assembled and its recommendations be made available by the Congressional deadline. We also urge Congress to designate funding for activating the Commission. Any delays in implementing the Commission's work will inevitably slow down efforts to reform the facilities competitive grant program.

In its report to Senator Leahy, the UAB proposed a number of procedures for directing money to facilities most deserving of increased federal funds. As stated at the time, we believe funds should be shifted to facilities with well-defined research goals and adequate staff and purpose to carry out those goals. In an era of shrinking fiscal resources, it is vital to direct research dollars to the programs and facilities that will yield the greatest return.

The Hatch Act. The UAB believes this base program is critical for maximizing the potential of the National Research Initiative. Hatch Act funds are used to help the agriculture industry become more competitive by bringing new technologies to the marketplace.

As noted in our FY 1991 appraisal, funding levels for this program have remained constant, except for inflation adjustments, for a number of years. This results in a diminished Federal research role in each State agricultural experiment station and has shifted the burden to the states, many of which are unable to contribute additional funds. We recognize the fiscal constraints, but wish to go on record as endorsing this significant program.

The Evans-Allen Act (Payments to 1890 Colleges and Tuskegee University). The UAB believes that the Federal Government should continue efforts to encourage diverse small-scale farming and to revitalize rural America. We consider the Evans-Allen program a critical element in supporting the Centers for Excellence objectives for 1890 institutions. These formula payments provide the base for building higher quality science education in the 1890 institutions. The Evans-Allen program assists this effort by preparing minority scientists and technicians to develop technologies that a small farmer can use to compete in today's agricultural business climate.

Cooperative Forestry Research (McIntire-Stennis). The UAB believes that the McIntire-Stennis program provides vital opportunities to attract and educate forest scientists. This includes offering specialized training at the graduate and post-doctoral levels. The Forest Service relies heavily on the expertise and independent scientific judgment of its civil servants while meeting the competing demands of forest management. The UAB does not believe that the United States can rely solely on educational funds provided by timber interests to fill the gap in the complex field of forestry sciences. We believe the McIntire-Stennis program is essential to maximizing the potential of the $53 million proposed for plant systems research in the NRI.

Higher Education. Due to budgetary constraints, the UAB reluctantly accepts the President's budget proposal of $5.5 million for higher education, down from $10.3 million in FY 1991.

In our FY 1991 budget appraisal, the UAB expressed strong support for higher education graduate training and challenge grant programs. We believe our student pipeline and professional science base continue to lag behind global competition. It has been projected that there will be a 10 percent shortfall in the number of graduate Ph.D.'s in agricultural disciplines over the

next 10 years. With the potential results and expansion of NRI, it would be shortsighted not to fund programs that attract qualified individuals into the agricultural disciplines.

We must continue to support these programs. The better we prepare our students and faculty in the food and agricultural sciences, the better they will be able to meet the challenges presented to U.S. agriculture. Last year, the UAB recommended that a percentage of the Graduate Training Grants be awarded to minority fellows. We are pleased to learn that the program regulations have been designed to encourage awards to minority fellows.

In last year's report, the Board urged haste in the creation of strategic plans (Blue Ribbon Committees) to address the underutilization of available minorities and female resources, and to upgrade appropriate 1890 institutions to Centers of Excellence. While these initiatives are being considered by the Department, and the Administration has proposed $11 million for 1890 Capacity Building Grants (Federal Administration budget line item), the degree to which we are focused falls far short of our national need. The United States must become more focused and more aggressive if meaningful progress is to be made in curbing the decline of our scientific base.

The UAB urges the Secretary of Agriculture to assume the leadership role in forging partnerships with DOE, NSF, NASA, and others to make science education a national priority. As part of this, the UAB recommends that USDA intensify efforts to attract a greater percentage of students to science and technical studies. The Board further suggests that USDA, as the lead Government department for Land Grant Institutions, is best positioned to bring minorities and females into the mainstream of agricultural science.

Federal Administration. The UAB recommends that $17,992 million be allocated for Federal Administration. This is an increase of $5 million above the President's recommendation. The UAB believes that the Administration's modest $2.7 million increase proposed for the 1890 Institution Capacity Building Grants—and zero funding for 1890 Strengthen Grants—falls short of our vision for "1890 Centers of Excellence."

The UAB believes that the Department, Congress, and the President share our vision for mainstreaming minorities into science and technology. We ask that an additional $5 million be appropriated annually to the 1890 Institutions Capacity Building Grants program through FY 1999. This money would be used to fund establishment of the Blue Ribbon Committee, which was recommended by the Board in last year's report, and as a reserve fund to carry out committee recommendations.

Aquaculture R&D and Demonstration Centers. The FY 1991 appropriation for Aquaculture Research & Development and Demonstration Centers was $3.75 million, divided equally among the five Centers. The UAB recommends funding for these existing Centers be continued at the $3.75 million level.

The Regional Center activities are cooperative with existing aquaculture research and extension programs in colleges and universities, State Departments of Agriculture, Federal facilities, and nonprofit private research institutions that have regional or national applications. These activities enhance viable and profitable commercial aquaculture production in the United States for the benefit of the producers, consumers, and the American economy.

The United States currently has a trade deficit of more than $6 billion for all fishery products; aquaculture is the most rapidly growing segment of U.S. agriculture. Productive research and extension demonstration projects coordinated by the Regional Centers have been conducted on improved production technology, genetics, aquatic animal health, nutrition, harvesting systems, water quality, marketing, and economics. Plans are to initiate work on Food Safety in FY 1992 for the benefit of producers and consumers. Continuation of these critical areas of research and development is essential to the continued growth of U.S. aquaculture.

Special Research Grants. With one exception, the UAB supports the President's proposal for Special Research Grants. We recommend adding $2 million for research into Biodiesel, which is the production and conversion of alcohol esters of vegetable oil into a diesel fuel substitute. Biodiesel has been shown to have physical and combustion properties comparable to petroleum diesel. Early evidence also suggests that Biodiesel

has environmental characteristics superior to petroleum diesel. To bring the product to the place where commercialization is possible, additional research is needed in the following areas:

- Increasing the oil yield per acre;
- Improving fuel processing technology;
- Continuing short- and long-term engine evaluations;
- Testing emissions of engines run on Biodiesel; and
- Improving cold weather utilization.

The 1990 Farm Bill requires that 90 percent of special research projects address regional or national problems. The UAB supports this requirement and agrees with the priority research areas the Administration has established: Global Change, Water Quality, Integrated Pest Management, Pesticide Clearance, and Pesticide Impact Assessment.

Critical Agricultural Materials Act. The UAB supports funding for critical materials research. Polymer research at the University of Southern Mississippi shows considerable promise for commercial applications pertinent to agriculture. In addition, the Acoustics Center at the University of Mississippi may prove to be valuable to the aquaculture industry. We believe these critical materials research programs should be continued in order to realize a return on the investment. Furthermore, we believe these programs should be reviewed on an annual basis, and continued only if it has been determined that agriculture has benefitted.

Rangeland Research Grants. The UAB supports the zero funding proposed by the President. This research should be continued under NRI.

Sustainable Agricultural Programs. The UAB supports the President's proposal of $4.45 million for Sustainable Agricultural Research (LISA), a $2.3 million decrease from FY 1991.

Supplemental and Alternative Crops. The UAB strongly encourages the expanded use of agricultural materials in industrial products and recommends a $5 million increase over FY 1991 funding for research into this area. These monies should be used for the purpose of implementing the Alternative Agricultural Research and Commercialization Act.

The United States has excess capacity in agriculture. Many new and traditional crops, forestry materials, and animal byproducts offer potential to provide natural products from renewable resources. By developing and marketing value-added products, the U.S. can simultaneously enhance its position in the global marketplace and spur rural economic development. However, care must be taken to ensure that industrial feedstocks do not over-utilize agricultural resources. This is not likely in the immediate future, given the amount of existing excess resources.

International Trade Development Centers. Although funds were appropriated for this program in FY 1991, the UAB concurs with the President's proposal for zero funding in FY 1992.

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Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Hatch Act	158,545	161,800	162,293	168,298	168,298
Cooperative Forestry Research (McIntire-Stennis)	12,975	18,000	17,820	12,975	12,975
Payments to 1890 Colleges & Tuskegee University (Evans-Allen)	26,169	26,169	26,346	27,321	27,321
Animal Health & Disease (Section 1433)	-0-	-0-	5,551	-0-	-0-
Critical Agricultural Materials Act of 1984	-0-	-0-	800	-0-	800
Competitive Research Grants:					
(1) NRI-Natural Resources and the Environment	15,000	15,000	14,000	23,000	23,000
(2) NRI-Nutrition, Food Quality, and Health	5,000	5,000	4,000	13,000	13,000
(3) NRI-Plant Systems	50,000	50,000	35,000	53,000	53,000
(4) NRI-Animal Systems	30,000	30,000	20,000	30,000	30,000
(5) NRI-Markets, trade and policy	-0-	-0-	-0-	2,000	2,000
(6) NRI-Processes antecedent to adding value or developing new products	-0-	-0-	-0-	4,000	4,000
	100,000	100,000	73,000	125,000	125,000

COOPERATIVE STATE RESEARCH SERVICE:
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Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Special Research Grants:					
(1) Water Quality	10,000	10,000	8,000	10,000	10,000
(2) Integrated Pest Management	4,000	4,000	4,000	5,000	5,000
(3) Pesticide Clearance	3,000	3,000	3,000	3,000	3,000
(4) Minor Use of Animal Drugs	329	329	450	429	429
(5) Pesticide Impact Assessment	2,968	2,968	2,968	2,968	2,968
(6) Acid Precipitation	-0-	-0-	-0-	-0-	-0-
(7) Biological Impact	300	300	300	300	300
(8) Global Change	5,000	5,000	-0-	5,000	5,000
(9) Animal Health Research at 1890's & Tuskegee U.		1,000	500	-0-	-0-
(10) Rural Development Centers		1,000	500	-0-	-0-
(11) All Other	-0-	-0-	42,750	-0-	-0-
(12) Biofuels	-0-	-0-	-0-	-0-	2,000
	25,597	30,597	61,968	26,697	28,697
Rangeland Research Grants	-0-	-0-	475	-0-	-0-
Federal Administration	12,239[1]	12,239	17,933	12,992[1]	17,992

COOPERATIVE STATE RESEARCH SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992 *(Continued)*

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommen-dations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommen-dation
Aquaculture R & D, and Demonstration Centers	-0-	4,000	3,750	-0-	3,750
International Trade Development Centers	-0-	-0-	3,152	-0-	-0-
Sustainable Agriculture Research (LISA)	4,450	4,450	6,725	4,450	4,450
Supplemental & Alternative Crops	918	918	1,168	918	5,918
Higher Education	6,000	6,000	10,350	5,500	5,500
Buildings & Facilities (Congressionally earmarked)	-0-	-0-	62,867	-0-	-0-
Competitively awarded grants (Research Facilities Act)	-0-	-0-	-0-	25,000	25,000
TOTAL	**346,893**	**364,173**	**454,198**	**409,151**	**425,701**

[1]Includes $11 million for an 1890 Institutions Capacity Building grants program.

Economic Research Service (ERS)

The ERS has as its primary responsibility the collection, analysis, and dissemination of economic data for use by farmers, consumers, traders, analysts, policy makers, and other decision makers in the food and fiber system. Current and reliable economic information and analysis are essential to informed and timely production and distribution decisions, policy development, and improvement of the economic performance of agriculture and rural America.

The UAB disagrees with the current perception that American agriculture is healthy and profitable. The long-term profitability of agriculture—and its ability to provide returns to management, labor, and capital—is not one of the objectives of current national policy. We recommend that, as part of its ongoing mission, ERS assess the effect of government policies on farm profitability and competitiveness. To provide a truer economic picture of American agriculture, the ERS should, in its evaluation of available data, report by both commodities and regions of the country in order to identify specific areas experiencing economic decline.

While the ERS budget has been nominally increased over the years, appropriations have not kept pace with inflation. The result has been a continual erosion of base programs. The ability of ERS to provide economic research and analysis on all requested issues must be accompanied by sufficient funding to attain timely and reliable data and analysis. The funding recommended in the President's FY 1992 budget of $62.479 million substantially addresses the agency's role in the national initiatives for food safety, water quality, and global change. But it does *not* adequately fund base programs.

The funding increases for the national initiatives will allow for continued data collection and analysis, which are both necessary for making informed policy decisions. However, other important areas of international trade, rural economic development, and resource allocation will continue to erode.

Food Safety. The ERS FY 1991 Food Safety Initiative called for "developing a broad framework that would encompass designing expanded data-collection activities, performing cross-disciplinary research, expanding public education, and supporting informed

public policy making and program management." The FY 1992 Initiative seeks to build upon this framework to translate research findings into timely, cost-effective programs and private sector practices.

The Board strongly supports efforts to ensure a safe food supply. Indeed, because safety is the issue, we urge the ERS to *avoid* criteria that would define "safe" as biological rather than chemical, and natural as opposed to synthetic. All biological and natural materials are chemicals, and a large and growing body of evidence suggests that "natural products," which are the more numerous, can be every bit as toxic as the most toxic synthetics.

The UAB supports the budget increase for this Initiative in the amount of $2.5 million. We wish to reemphasize the importance of analyzing the impact of expanded monitoring and increased regulation of yields, production costs, and product availability. In addition, the UAB recommends that further attention be given to:

- The costs/benefits of multiple levels of regulation (Federal, State, and local). The UAB recommends that strong preemptive language be included in the Federal Insecticide, Fungicide, and Rodenticide Act to ensure uniformity and consistency throughout the country in the regulatory area regarding pesticides. As part of its food safety research, ERS should study the adverse economic impact that occurs in different areas of the country where standards exceed those required under FIFRA.
- The impact of the "Circle of Poison" issue on farmers, manufacturers, distributors, and consumers. This issue was debated extensively during consideration of the 1990 Farm Bill, and it will surface again. Particular attention should be paid to the problem of importing foods from countries using pesticides that have been banned from use in the United States.

Water Quality. ERS has been identified as the lead agency for database development and evaluation in the USDA Water-Quality Initiative. FY 1992 endeavors will include continued efforts to:

- Enhance the statistical reliability of agricultural chemical-use data;
- Build and maintain an expanded database, in cooperation with NASS; and

- Provide the analytical component of the Department's Water-Quality Initiative.

The UAB supports the budget increase of $1 million for this initiative.

Decisions involving issues of water quality must be based on reliable statistical data and expert analysis. The UAB believes that additional attention should be given to:

- The costs/benefits of multiple levels of regulation (Federal, State, and local). The UAB recommends that laws affecting management of water quality include strong preemptive language that prevents inconsistent application of the standards; and
- The impact of the initiative on production costs as well as the environmental considerations.

Global Change. Changes in global climate have significant implications for agriculture and forestry. The President's FY 1992 budget recommends $1.7 million for ERS to assess this impact. The Board supports this recommendation.

Commodity Economics Division. U.S. producers must achieve and retain competitiveness in a world marketplace to survive. To ensure the greatest opportunity, ERS must provide current data and analysis about production, demand, and prices for farm products.

Consumers, policy makers, and others need current and reliable data and analysis to make informed decisions relating to consumption, policy making, program management, and competitiveness. In addition to collecting base data for production, consumption, pricing, and market performance, UAB stresses the need for continued studies on:

- The impact of governmental policies and programs on profitability and competitiveness of U.S. agriculture;
- The impact of deteriorating transportation infrastructure on production agriculture and on rural communities;
- The effect of opportunities for greater planting flexibility on producer profitability, as provided in the 1990 Farm Bill; and
- The impact of common markets throughout the world and their economic effect on U.S. agricultural policy and production.

The UAB concurs with the $16.5 million recommended for this division in the President's proposed FY 1992 budget.

Agriculture and Trade Analysis Division. The rapidity of change in world markets presents an ever-increasing challenge for producers and policy makers. Current, reliable information and expert analysis are critical to the understanding of these markets, to the competitiveness of U.S. producers, and to rational decisions by policy makers.

The UAB recommends that a high priority be placed on continued analysis of the effect of the following on U.S. agriculture:

- Impact of greater global trade protectionism;
- Effect of changes in Eastern European economies;
- Economic implications of a U.S.-Mexico free-trade agreement; and,
- Effect of the U.S.-Canadian free-trade agreement.

The UAB supports the budget for this division in the amount of $12.039 million.

Resources and Technology Division. This division has responsibility for the bulk of ERS efforts in food safety and water quality. In addition to analysis of ongoing resource and technology issues, UAB recommends that continued attention be given to:

- The impact of continuing loss of pesticides for minor-use crops;
- The impact of the reduced number of manufacturing companies and the increased concentration of market power in industries that serve production agriculture; and
- The effect of diverting agricultural resources for production of fuel and industrial feedstocks on producers, consumers, and the Federal budget.

The UAB agrees with the President's FY 1992 recommendation of $18.430 million for this division.

Agriculture and Rural Economy Division. The U.S. is continuing to see economic decline in its rural communities. The lack of profitability of American agriculture and the attendant decline in the infrastructure supporting rural America have led to lower living standards for many Americans.

The Rural Economic Development Research and Monitoring Program in ERS, with cooperation from land-grant universities, is by far the largest source of information on rural conditions, rural economies, and their problems for policy makers at every level of Government.

The UAB has defined revitalizing rural America as a critical issue. The ERS has a very important role to play in the continued research and analysis of the many factors that influence the health of rural communities. Assistance in the development of strategies for leaders at the local, State, and national levels is critical.

The UAB concurs with the recommended budget of $15.479 million for this division.

Erosion of Base Programs. The President's proposed FY 1992 budget for ERS supports the agency's efforts with respect to the national initiatives in food safety, water quality, and global change. The money allocated for each division provides minimal additional funding for ongoing programs, and will thus perpetuate the problem of erosion in both staffing and base programs. While the UAB strongly feels that more money is needed to support ongoing ERS research and programs, we recognize the need for fiscal restraint, and therefore support the President's recommended budget.

ECONOMIC RESEARCH SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Commodity Economics Division	14,174	14,299	14,144	16,531	16,531
Agriculture & Trade Analysis Division	11,112	12,818	11,424	12,039	12,039
Resources & Technology Division	15,836	16,268	14,144	18,430	18,430
Agriculture and Rural Economy Division	15,140	16,417	14,688	15,479	15,479
TOTAL	**56,262**	**59,802**	**54,400**	**62,479**	**62,479**

Extension Service (ES)

The Cooperative Extension Service (CES) is a public-funded, nonformal education network linking the research and education resources of the USDA Extension Service and the Nation's land-grant colleges with the county extension offices. The CES mission is to help people improve their lives through education that uses scientific knowledge focused on issues and needs.

The UAB applauds the new direction taken by CES in the past 3 years toward issue-based programming and strategic planning. By sharpening its focus on critical issues, CES will be able to make a greater impact on the problems and opportunities generated by changes in the global economy; our environment; U.S. demographics; and family structures, values, and resources.

The UAB is pleased with the total funding level proposed for ES in the President's budget. We have recommended some shifts in funding areas to more specifically target the long-term priorities emphasized by the UAB. The most important change we have recommended involves the Expanded Food and Nutrition Education Program (EFNEP).

Expanded Food and Nutrition Education Program. EFNEP was created to improve diet and nutrition education for families in American cities and rural areas who are trying to subsist on incomes less than 125 percent of the poverty index. The program has grown from a pilot project started in the late 1960's to the Nation's only Federally funded program specifically dedicated to nutrition education. Unfortunately, the need for the program has grown as well. In the last 20 years, EFNEP's constituency has increased from 15 to nearly 20 percent of the U.S. population.

The UAB commends the program's innovative use of paraprofessionals to help program participants help themselves. We are convinced that EFNEP has improved the nutritional practices of those it has served. However, we remain concerned about the imbalance between the magnitude of the problem and the scope of the program to address it. We believe the population needing this assistance is too large to be adequately served by the EFNEP programs, which are available in a limited number of counties throughout the nation. Likewise, the problems facing the population are more complex than just dietary concerns. We

believe that more comprehensive programs addressing the broader needs of families would be more cost-effective in serving this audience.

For these reasons, the UAB has urged Congress and the CES to reevaluate the EFNEP program in terms of total basic-life needs of low-income groups, and to consider ways of integrating the program funds and personnel into the broader based CES programs. We believe this will give more flexibility to individual State program leaders for meeting the specific needs of their area. To accomplish this integration, the UAB recommends removing funding from the proposed 1992 budget line item dedicated to EFNEP, and instead increasing Smith-Lever 3(b) and (c) funding by $30,262 million. By using these funds to leverage State and private sector support, the program can still access funding equal to the 1991 appropriation. To further facilitate integration of EFNEP into comprehensive CES programming, the UAB recommends an additional $6,373 million be added to Smith-Lever 3 (b) and (c) programs, for a total of $298,735 million.

Pest Management and Pesticide Impact Assessment. Producers and researchers agree on the value of integrated pest management for increasing farm productivity while curtailing input costs and preserving environmental quality. It is critical that scientific information about pest-control substance and management be communicated to both producer and consumer audiences. The Cooperative Extension System is an effective network for transferring, promoting, and user-testing the information and technologies. The UAB supports the President's proposed increase of $350,000 for the National Agriculture Pesticide Impact Assessment Program, and the $2.5 million increase for the Integrated Pest Management Program.

Farm Safety. In the last analysis, the output of the American agricultural system depends on the system's efficiency. Shortages in farm labor, for example, threaten productivity in many areas of the United States. Worker safety regulations and heavy Workers' Compensation expenditures exacerbate the problem. It is imperative that the USDA expand extension programs to provide farmers and farm workers with vital information to help reduce and prevent work-related accidents and the associated rising costs, both in terms of dollars and human capital.

We recommend $3 million additional funding for farm safety, to be awarded through a competitive grant process. This process should stimulate innovation in safety education and provide for tailoring educational programs to farmers and farm workers in varying regions and agricultural industries. The process also offers an opportunity to leverage private funds, such as the Easter Seals project for assisting disabled farmers to maintain their agricultural enterprises.

Water Quality. Agricultural chemicals and management practices may be compromising the quality of the Nation's groundwater. The UAB recommends expanded research and extension programs to help producers and municipalities develop and follow improved management practices aimed at reducing contamination from nonpoint sources of pollution (such as leaching and runoff from fertilizers and pesticides, and contamination from landfills and septic systems). Educational programs should help the public objectively analyze and understand the level of acceptable risk in water supplies, as well as provide information that can assist in developing policies that provide feasible solutions.

Food Safety and Quality. The UAB supports the $2 million allocated for Food Safety and Quality in the President's proposed budget for ES. The Nation faces an epidemic that threatens the food supply—an epidemic of rumors about food safety and quality. We cannot afford to let an ill-informed public cause us to lose the technological advances that have allowed U.S. agriculture to plentifully and economically feed a growing population. The CES network is an excellent resource for increasing knowledge and understanding about the various components of the food production system, and for improving the ability of consumers to make informed choices on food safety, quality, and composition.

We recommend that CES involve various members of the food industry (food producers, processors, handlers, and retailers) in a multidisciplinary program to produce and deliver a message to the Nation about the risks and benefits associated with food safety. Similar CES programs are being instituted at local and State levels in cooperation with volunteer organizations, health professionals, food industry representatives, and local and State agencies. The Georgia Extension Service, for example, has

prepared a resource manual for their food safety program specialists on quality awareness, including risk and benefit data. The Board believes successful food safety programs should be expanded to a nationwide, uniform program. To be truly beneficial, however, such programs must have multidisciplinary networking and cooperation to avoid expending resources on similar or duplicated efforts.

Rural Economic Development. The UAB believes the unparalleled database on rural development issues and the rural area networks of CES make it well-suited for a leadership role in the President's Initiative on Rural Economic Development. The Board is pleased that its FY 1991 recommendation that CES provide specialized training for local community leaders was incorporated in the Initiative. However, we are disappointed that Smith-Lever 3(d) rural economic development funds were not appropriated last year or proposed this year.

While still important, the development of agricultural markets or spinoffs cannot be the primary objective of rural economic development programs. Strengthening the leadership capacity of local citizens is fundamental to creating the infrastructure that supports business retention and expansion, commercialization of new processes and products, and the diversification of the economic base of rural areas. Light industry, tourism, and service industries are seeking lower taxes and improved quality of life for their workers. A small town that has this infrastructure and leadership is an excellent choice for industry relocation.

The CES can play an important role in attracting these industry relocations by encouraging and training local entrepreneurs and community leaders. Rural economic viability also means that the young people do not leave home for better services and benefits in urban areas. The next generation of local labor and management is the most important rural resource rural communities have—but it can be one of the hardest resources to conserve. For these reasons, the UAB recommends $15 million for rural economic development under section 3(d) of the Smith-Lever Act. This represents an increase of $5 million over our FY 1991 recommendation.

Last year, the UAB recommended expanding NRI categories of research to include trade, rural revitalization, and new uses for

agricultural commodities. We fully support the President's request for increased funding for the NRI, and are pleased that the additional funding is targeted for these research areas. We believe that a portion of these funds should be dedicated to research that sustains agricultural users, producers, and processors in rural communities. As recommended last year, this research includes:

- Improving the profitability of resource use in rural America;
- Educating and training local leadership;
- Improving the physical infrastructure of rural areas, including roads, water and sewage systems, electricity, and the like; and
- Addressing issues that affect rural living, including schools, health, education, and modern telecommunications infrastructure.

Rural Development Centers. CES believes the Regional Rural Development Centers are, in concept, a valuable resource for assessing the societal and economic impacts of our move toward less labor-intensive agriculture. The Centers are scheduled for intensive review later this year. Should this oversight demonstrate that the centers are actually fulfilling their mission, we recommend augmenting and analyzing the data they have already accumulated, and continuing to fund this program.

However, should the review indicate that the centers do *not* provide a valuable mechanism for effectively improving rural economic development, they should be discontinued. It is for this reason that the UAB recommends that this program be maintained as a separate line item, and that $1 million be included to fund it. If a decision is made to continue funding the centers, future budgets should integrate the funding into the line item for general support to the rural economic development budget.

Youth at Risk. The UAB is fully supportive of the President's proposed $7.5 million increase in funding for this program. If appropriated, this would double the FY 1991 funding level for a total of $15 million. The problems affecting American youth are fundamental in nature, and result from three primary conditions: lack of family support, negative peer pressure, and poverty. Through youth development programs, young people can experience group interaction, develop confidence, and learn leadership skills that will help them prepare for the future.

In August 1990, the UAB and Joint Council learned about Youth-at-Risk programs in Minnesota that help young people stop substance abuse and prevent school dropouts, teen pregnancy, and suicide. Similar programs in other States help prepare young people for high-tech careers, and offer value-added after-school care. The UAB applauds and encourages such youth development programs because they are wise investments in America's future.

Renewable Resources Extension Act (RREA). The National Research Council of the National Academy of Sciences produced an exhaustive study entitled "Forestry Research: A Management for Change," and recommended that funding for RREA be increased to $15 million. The UAB believes this program is a cost-effective system for transferring technology to private forest and rangeland owners. It has attracted matching funds from State and private sources, and has reached thousands of nonindustrial private landowners with information and education for better management of woodlot, range and pasture, and wildlife and fisheries resources. We recommend $3 million to fund the RREA program; this is the same amount we recommended for FY 1991.

1890 Colleges and Tuskegee University. The $4.2 million increase proposed for extension projects in the 1890 institutions underscores the UAB's commitment to strengthen science and education programs, and to improve their ability to meet the challenges of our Nation's rapidly changing racial, gender, and ethnic profile. These funds should focus on educational programs targeting drug abuse, teen pregnancy, aging, sustainability of small-farm operations, nutrition, and health.

Other Recommended Programs. The UAB recommends that USDA continue to fund the following programs:

- 1890's Facilities Grants;
- D.C. Extension; and
- Federal Administration.

EXTENSION SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommen-dations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommen-dation
Smith-Lever 3(b)&(c)	246,535	246,535	252,608	262,100	298,735
Smith-Lever 3(d):					
(1) Pest Management	7,164	7,164	7,450	10,000	10,000
(2) Farm Safety	-0-	-0-	1,970	-0-	3,000
(3) Urban Gardening	-0-	-0-	3,557	-0-	-0-
(4) Food & Nutrition Education (EFNEP)	21,600	21,600	60,525	58,635	-0-
(5) Pesticide Impact Assessment	3,580	3,580	3,230	3,580	3,580
(6) Rural Development Centers	-0-	1,000	950	-0-	1,000
(7) Ag Competitiveness	-0-	10,000	-0-	-0-	-0-
(8) Rural Economic Development	-0-	10,000	-0-	-0-	15,000
(9) Indian Reservation Extension Agents	-0-	-0-	1,000	-0-	-0-
(10) Water Quality	15,500	15,500	10,375	15,500	15,500
(11) Youth at Risk	10,000	10,000	7,500	15,000	15,000
(12) Food Safety & Quality	2,000	2,000	1,500	2,000	2,000
	59,000	80,844	98,057	104,715	65,080

EXTENSION SERVICE:

Fiscal year 1991 budget history and recommendations for fiscal year 1992 *(Continued)*

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
1890 Colleges and Tuskegee University	23,092	23,092	22,794	27,000	27,000
1890's Facilities Grant	9,508	9,508	9,508	9,508	9,508
Renewable Resources Extension Act (RREA)	-0-	3,000	2,765	-0-	3,000
Farmers Assistance Grants	-0-	-0-	2,550	-0-	-0-
DC Extension	1,000	1,000	991	1,000	1,000
Federal Administration	5,697	5,697	9,205	6,494	6,494
TOTAL	**345,676**	**369,676**	**398,478**	**410,817**	**410,817**

Forest Service Research

America's forests and rangelands represent a national asset of enormous value. Our public and privately owned forest lands supply the American people with much of their water, livestock, recreation, lumber, and paper. For almost a century, the Forest Service has conducted research at field stations, experiment stations, and the Forest Products Laboratory.

The UAB strongly believes that such research should be funded at levels that will provide for increased productivity of all forest uses. The public is demanding environmental quality, economic growth, and international cooperation. In many cases, trees are the answer.

The President's "America the Beautiful" initiative, created last year, is a bold approach to reforestation; and it recognizes the importance of trees to our society. The UAB reiterates its recommendation from last year that funds for forest entomologists, pathologists, and fire scientists be provided out of funding allocated for the initiative to ensure the long-range viability of this investment.

The UAB commends the Forest Service for its strategic planning, and supports the mission statement developed in the document *Strategy for the 90s for the USDA Forest Service Research*: "to serve society by developing and communicating the scientific information and technology needed to protect, manage, and use the renewable natural resources of the Nation's 1.6 billion acres of forests and related rangelands." The UAB continues to support the multiple-use concept for management of our national forests.

The foundation of the Forest Service Research program is ongoing, long-term research—which the UAB has strongly supported in the past. Because it takes many years for trees to grow and for ecosystems to manifest changes, research activities must be consistently funded at a level that provides continuing study and tracking of changes. It is short-sighted and wasteful to abandon research in which large amounts of human and institutional capital have been invested when the work has not yet been completed. The UAB recommends that foundation funding be continued at levels equal to FY 1991 appropriations.

The Forest Service Research budget is appropriated by five budget line items. Details of the UAB recommendations for each of these line items are included below.

Forest Protection Research. The UAB recommends a decrease of $3 million from the President's FY 1992 budget proposal for this program, which allows for continued research on forest health problems. Examples of such projects include developing environmentally safe pheromones for controlling insects, continuing Gypsy Moth research, and studying canopy atmospheric interactions. The UAB cautions, however, that while many new priority problems (such as tropical forestry research) may have merit, they would stretch the Nation's resources beyond what the Board believes is currently prudent.

Resource Analysis Research. In past reports, the UAB has supported a funding level for inventory and analysis that provides for a 10-year average cycle for all regions of the country. Congress appropriated sufficient funds in FY 1991 to achieve this goal, but the Administration proposal for FY 1992 settles for an 11-year cycle. A longer inventory cycle will lead to less informed forest research investment decisions and delay proper forest development strategies. The UAB again calls for sufficient funding to maintain a 10-year average cycle.

In past reports, the UAB has called for increased funding for additional recreation research. The Resources Planning Act (RPA) hailed recreation as a major emphasis area for the agency in the 1990's. The proposal contains a $72.6 million increase over FY 1991 appropriations for recreation management. The "America the Beautiful" part of this proposal envisions a major new initiative for recreation.

The UAB strongly supports additional research with respect to these initiatives. We believe that better information is needed on how to manage recreation sites adjacent to urban areas so the needs of different cultural groups can be satisfied. More research is also needed on managing wildlands outside of formally designated wilderness areas.

Trees can raise the quality of life in urban areas. Additional urban forestry research is needed to support urban tree-planting efforts in the "America the Beautiful" program, but the UAB recommends that funding for this research come from the base

initiative. The UAB supports the President's FY 1992 budget proposal for Resource Analysis Research.

Forest Management Research. Major investments have been made in genetics and in growth and yield research during the past three decades. Initial findings have helped raise outputs to meet escalating demands for wood products. The proposed funding level would eliminate some of this work before completion. Long-term research is not possible if funding is turned on and off like a faucet; steady, continued support is necessary. Therefore, the UAB recommends an increase of $3 million for Forest Management Research.

The UAB applauds the shift in Forest Management Research emphasis toward examining responses of entire ecosystems to management rather than just tree responses. This approach provides a new perspective for land managers that will benefit forests across the Nation. However, concentrating research on particular geographic areas can unfairly deprive forests and forest visitors elsewhere of these benefits. Care needs to be taken to avoid this problem.

Forest Environment Research. Clean water and diverse plant and wildlife populations continue to contribute to our Nation's prosperity. Many streams that are important to water supplies begin in high mountain forests; thus, it is critical to manage those lands to preserve desired flows and water quality. Human existence and prosperity are based largely on our ability to utilize diverse biological properties of plants, animals, fungi, and microorganisms for food, clothing, shelter, medicines, and other products. The UAB recommends an additional $3 million for research to determine the relationship between forests, water quality, plants, and wildlife populations.

Forest Products and Harvesting Research. The United States is running out of landfill sites for solid wastes. Many of the 18,000 landfills that existed 20 years ago have closed; only 6,000 exist today. Paper and wood waste discarded by consumers account for 40 percent of solid wastes buried in landfills or incinerated each year. Much of this waste has the potential for being reused, a goal supported by the UAB. In addition, research on timber bridges, structural safety of wood-frame construction, and better design of wooden structures all result in

significant benefits for the consumers. The UAB recommends an increase of $1.4 million for this budget line item.

Overall, the UAB is pleased that Congress appropriated a significant increase above the FY 1991 President's budget for Forest Service Research. The final FY 1991 funding level of $167,629,000 is only $543,000 less than the UAB recommendation. The UAB urges Congress to continue to fund the Forest Service Research budget at the FY 1991 appropriation level, an increase of $4.4 million over the President's budget proposal.

FOREST SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Forest Protection Research	35,644	39,644	38,196	37,157	34,157
Resource Analysis Research	25,582	30,082	29,414	31,395	31,395
Forest Management Research	30,000	34,000	36,562	33,310	36,310
Forest Environment Research	36,568	38,568	40,718	37,176	40,176
Forest Products and Harvesting Research	20,878	25,878	22,739	24,192	25,591
TOTAL	**148,672**	**168,172**	**167,629**	**163,230**	**167,629**

Human Nutrition Information Service (HNIS)

The passage of the 1990 Farm Bill, the 1990 Nutrition Monitoring Act (P.L. 101-445), and the strategic directions found in the President's 1992 budget for agricultural science and education reemphasize the unique and essential service performed by HNIS. HNIS monitors the marketplace for changes in consumer eating patterns and attitudes, and analyzes foods in the American food supply for nutrient composition.

The resulting database provides the best, most complete picture of foods and nutrients available for consumption, and records the actual quantities of nutrients consumed by individual Americans. Thus, HNIS provides the bottom-line information needed to gauge Federal actions in ongoing programs as well as in newly legislated programs.

Changed Mandate—Inadequate Funds. In 1988, Congress vested HNIS with the primary responsibility for framing Federal nutrition policy and developing public guidance for its implementation. It gave HNIS the mandate to monitor the food-consumption practices of *healthy* Americans. This mandate has recently been broadened by legislation.

The proposed FY 1992 budget includes a more holistic approach to problem solving by incorporating several different legislative thrusts. The 1990 Farm Bill sets new priorities for agricultural research; these require USDA to consider environment, nutrition, water quality, and competitiveness when awarding research grants. The legislation also includes sustainable agriculture directives to help farmers find different production methods to decrease chemical residues in the food supply.

As a precursor to the 1990 Farm Bill, the 1989 Interagency Pesticide Data Initiative was started. This program measures the potential exposure of individuals to pesticide residues resulting from production methods for selected agricultural commodities. The first step is to track the actual consumption patterns for selected fruits and vegetables. Additionally, the 1990 Nutrition Monitoring Program involves the Department of Health and Human Services (DHHS) as an equal partner with USDA in coordinating research projects, reviewing and approving dietary

guidance, and setting priorities and interagency budget plans for nutrition programs.

HNIS should be funded at levels sufficient to maintain its database relevancy and to handle these new program thrusts. Although the FY 1992 budget request for HNIS has been increased, the Executive request does not include enough funds to maintain the long-established HNIS database. These crucial data are not duplicated by any other branch of government or industry.

If the changing population demographics and the vast array of new products introduced into the food supply each year are not included, the database will quickly become unrepresentative and incomplete. The legislated strategies designed to resolve our Nation's needs cannot then be satisfactorily met. Furthermore, the outcome of current and future programs in food and water quality and safety, sustainable agricultural practices, publicly funded food programs, and nutrition education and health recommendations will all be based on an unclear picture of actual intake and food composition assumptions. This would cost our Nation more in future dollars and wasted time than it would take to provide continuous funding for an adequate HNIS database.

Coordinated Programs—Coordinated Funds. Funds within the 1992 Presidential budget should be directed to maintenance and expansion of the HNIS database. Over the years, the UAB has cited the *Ring of Nutrition Policy* within USDA; this ring includes ARS, CSRS, and ES.

The *Ring of Nutrition Policy* was prompted by our analysis of Congressional action in 1988 to vest HNIS with the primary responsibility for framing Federal nutrition policy and developing public guidance for its implementation. The important difference is that HNIS is the only Federal agency given the mandate to monitor the food consumption patterns of *healthy* Americans.

In the proposed 1992 budget, the *Ring of Nutrition Policy* includes, as before, ARS, ES, and CSRS. Newly added is the joint DHHS/USDA National Nutrition Monitoring Group, as well as AMS, NASS, and ERS (due to their involvement with the new food safety initiative). Ongoing programs that also base their programs on HNIS research, such as WIC, Food Stamps, and EFNEP, have been given budget increases in the proposed FY

1992 budget. Therefore, the UAB recommends that the necessary funds for maintaining an up-to-date database at HNIS be shared by the above-mentioned groups through coordinated programs and leveraged funding.

As the *Ring of Nutrition Policy* has demonstrated in the past, these agencies do not recognize their interdependence with a small agency like HNIS. Yet they use HNIS data as the foundation information for their programs. This information can be used to set research and education priorities, determine program strategies, measure outcomes, and to create messages to communicate to Americans for personal behavior or public policy reinforcement or change. If not based on real behavior and food supply content, these agency programs will be inadequate or wrong.

Last year, UAB called for HNIS to implement a strategic marketing approach to define its true customer and service ability. HNIS reports that it is currently in the process of detailing measurable objectives, action steps, timelines, and resource needs. The Board commends HNIS for its adoption of the Management by Objectives (MBO) system, which will facilitate improved annual and long-range planning. The UAB believes this system will also enable HNIS to improve the recognition of its essential service within the broadened *Ring of Nutrition, Safety, and Environmental Policy* (see chart). As a consequence, funds can be directed or leveraged by the other agency participants to help HNIS broaden and maintain its information service.

Critical Research Targets. Last year, the UAB suggested that HNIS *continue* to adapt the database as needed to survey the changing dietary habits of different ethnic and age groups. However, this task is made more difficult by the broadened mandate of the new legislation mentioned earlier. This mandate includes requests to research the dietary habits and needs of many more groups beyond the general population, including African Americans, Hispanics, Native Americans, pregnant and lactating women, school children, residents of nursing homes, senior citizens, prison inmates, and the homeless, to name just a few.

In reply to the UAB suggestion, HNIS cited its difficulty in implementing a specific research methodology to track these new population groups and the foods they eat. This technique, known

RING OF NUTRITION, SAFETY, AND ENVIRONMENTAL POLICY

as the phased-research method, is described as follows. In Year 1, HNIS would conduct methodological and survey research for a particular target group, and also begin developing composition data for any special foods consumed by this group. In Year 2, HNIS would conduct the actual survey of this first group, launch the supporting research activities for a second target group, and also begin work for a survey of a third target group. This interlocked schedule would continue through later years. Federal budget constraints, however, have prevented implementation of this scheme, and thus HNIS currently has no new surveys in the pipeline.

The UAB strongly believes that the HNIS phased-research plan can work if given sufficient time and funding. The UAB also believes that the answer, once again, lies in coordinated

programming and funds. If the agency or group seeking the targeted market information funds the research, then it can be done. This might also relieve some of HNIS's current difficulties in assessing and prioritizing needs between subset groups.

The UAB continues to believe that adequate subsets of many minority groups will be needed. By the year 2000, the percentage of "minority" composition will be more dramatic than now, except that the minorities will then be majorities. Given the time it takes to sample any population group, the UAB feels that these groups should be adequately considered *now* in order to give the policy makers of the year 2000 the data they will need to address the concerns of their existent populations.

Another target group mentioned in UAB's last report is the international marketplace. The UAB believes that this data collection could be done in conjunction with the Foreign Agricultural Service (FAS), or through OICD funds. The FAS or OICD could provide funds to gather general food preference and consumption data in the foreign markets our Nation chooses as important for export market penetration.

This information is vital to any food export promotion activity, and could also be useful domestically. The data could be incorporated into or compared with domestic studies of the eating patterns and food nutrient intakes of similar ethnic groups.

Data Dissemination. The UAB would like to commend HNIS on its efforts to improve access to its data. HNIS is looking into simple programs that would make the turnaround of information on eating patterns and attitudes more rapid. Currently, HNIS publications, such as the *Handbook of Nutrient Composition of Foods in the American Supply*, are the major methods for communicating data. HNIS is attempting to set up a system whereby these data tables could be accessed through other computer systems. In addition, HNIS is trying to make information about simple correlations between eating patterns, attitudes, and nutrient content available to the public, media, and educators.

Nutrition Education Efforts. The UAB is pleased to see the narrowing of the target groups to be reached through HNIS educational efforts. The new focus on health educators, who can communicate information to more Americans, is a good use of HNIS dissemination dollars. The same can be said for the

"Eating Right" campaign, which involved other groups and organizations in adapting and promoting the campaign components. The UAB assumes the same technique will be used to introduce the "5-pyramid" eating program, which will spread the dietary guidance advice in an easily followed graphic style to a wider audience.

As stated previously, the UAB believes that additional funding to increase the impact of these programs could come from the many agencies that are involved in disseminating dietary and safety information to the public.

HNIS is to be commended for the advances it made this year, particularly in the dissemination of educational materials and the implementation of a strategic planning process. These new strategies can lay the groundwork for meeting the increased demand for a database containing information on eating habits, food attitudes, and the nutrients consumed.

The UAB is most concerned that this database be funded at adequate levels. If not, baseline information, which is essential to developing realistic public health and safety messages as well as public policy, will be inadequate. We therefore encourage full funding to maintain this national data collection process.

HUMAN NUTRITION INFORMATION SERVICE:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity[1]	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Administrative Costs					
Research Analysis and Technical Assistance		Specific funding levels were not recommended.			
TOTAL	**10,705**	**12,705**	**9,923**	**12,654**	**12,654**

[1]Includes salaries and extramural costs.

Office of International Cooperation and Development (OICD)

The UAB supports OICD's activities in fostering foreign currency and cooperative international collaborative research, facilitating scientific and technical exchanges, and serving as liaison to international organizations. The UAB also approves of OICD programs that fund training and technical assistance in over 80 developing countries. The role of OICD is critical in keeping U.S. agricultural technology globally competitive, for increasing U.S. agricultural exports, and in helping to increase income and food availability in developing countries.

The UAB believes that OICD should continue to conduct peer reviews of international research and exchange proposals before funding them, utilizing the following criteria:

(1) The accrual of benefits to U.S. agriculture;

(2) The soundness of the scientific approach; and

(3) Consistency with U.S. agricultural research priorities.

OICD programs have become more important due to the Administration's increased geographical focus on the Soviet Union, Eastern and Central Europe, and Latin America. In addition, OICD can provide valuable linkages for U.S. agricultural scientists in the following areas:

- The acquisition of germplasm to be utilized by U.S. plant breeders;
- Protection of U.S. plant breeders;
- Protection of U.S. agriculture from foreign pests and diseases;
- Food safety;
- Environmental research; and
- The increased utilization of U.S. agricultural exports overseas.

Scientific Exchanges. The Board was informed that the 1990 Farm Bill contains authority for the Secretary of Agriculture to receive local currency repayment for new Title I sales, and to use those local currencies to fund collaborative research and scientific exchanges.

Unfortunately, however, there are no guarantees that these monies will be available when needed or in sufficient amounts. In addition, they will not be available for exchanges with the

more scientifically advanced countries such as Taiwan, Japan, and other OECD countries. The UAB recommends funding short-term scientific exchanges and collaborative research efforts on high-priority U.S. agricultural programs, and asks for an appropriation of $2.4 million for this program.

Foreign Currency Program. The Foreign Currency Research Program is active in world regions that are of particular importance to the export of U.S. agricultural products and to U.S. foreign policy in general. These include Eastern Europe (Poland and Yugoslavia), Asia (Taiwan, India, and Pakistan), Africa (Egypt), and Latin America (Costa Rica).

Purchase of foreign currency is needed to continue important programs in Taiwan and Yugoslavia, such as crop genetics, DNA probes, soybean oil stability and utilization, agricultural management practices, and ground-water protection. For programs in developing and East European countries, there is a great need to replace old equipment, such as analytical instruments, and to purchase new equipment (from U.S. suppliers, whenever possible). In addition, there is an expanding interest in agriculturally related environmental concerns. Therefore, the UAB recommends an appropriation of $2 million to fund the foreign currency research program.

Educational Workshops. Workshops on ground-water protection, integrated pest management, soil erosion, and effects of acid precipitation and global change are being set up for Eastern Europe (Czechoslovakia, Hungary, Poland, Yugoslavia, Rumania, and Bulgaria). The UAB believes these workshops will be especially valuable because they will assist Eastern Europe and simultaneously yield information, data, and research useful to U.S. agriculture.

OFFICE OF INTERNATIONAL COOPERATION AND DEVELOPMENT:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Foreign Currency Research	-0-	1,000	1,062	-0-	2,000
* Scientific Exchanges	1,833	Not reviewed by UAB	1,858	1,919	2,400
* Adm. of Intl. Res. (Collaborative Research)	1,452	Not reviewed by UAB	1,452	1,551	2,000
	$3,285		**$4,372**	**$3,470**	**$6,400**

* Approximately one million is utilized by OICD for salaries and expenses. For FY 1992, USDA and OMB have requested 0.5 million for administrative salaries and operations so that more of the above money could go into the Program.

National Agricultural Library (NAL)

A vitally important link in scientific progress is having easy access to current information and data. In its FY 1991 Budget Appraisal, the UAB stated that reconciliation was needed between the broad demands made on the NAL to provide such access and the funding to meet these demands.

To carry out and expand the NAL activities, the Board last year recommended a funding level of $18.8 million, an increase of $3 million over the Executive budget request and $2 million over the actual 1991 appropriation. We also recommended that NAL be allowed to charge a fair market value for at least some of its services.

The UAB is gratified that the 1990 Farm Bill does authorize the NAL to recover costs of services. We are hopeful that this new revenue source and additional future funding will help pay for upgrading and expanding the programs and services so necessary for the NAL to excel as the Nation's chief agricultural information resource.

In the reality of fiscal limitations, the UAB agrees with the President's funding request of $17.453 million for the NAL. We note, however, that networking, salaries, and some facility improvements are the only expenditures covered by this modest $1.08 million increase.

When additional resources can be allocated, the UAB believes the following items should be given funding priority so the comprehensive database at NAL can be more fully utilized:

- A National Rural Information Center Clearinghouse in conjunction with the Extension Service was established by the 1990 Farm Bill. The UAB believes the NAL can provide a vital role in providing information access to rural users, and urges funding for this center.
- The UAB continues to promote the potential of the Biotechnology Information Center at NAL for becoming the preeminent national source of published information on biotechnology as it relates to agriculture. Current funding will enable initial planning to create a network of library collections and databases among members of the Midwest Agricultural Consortium, located at Iowa State University.

Future NAL funding should be targeted for expansion of biotechnology networking capabilities in the Midwest and for support of similar biotechnology planning efforts in other geographic areas as this research and literature expands.

- Funding should be provided to fully upgrade the integrated library system at the NAL so more users will have access to a larger portion of the NAL database without the necessity of going through commercial vendors.

Finally, the Board is pleased to know the NAL is discussing the recommendation we made last year to publish a rolling 5-year plan that includes explicitly stated priorities and required resources. We are also happy to learn that the NAL will pursue the creation of a software program such as the National Library of Medicine's "Grateful Med" when it has fuller access to the AGRICOLA database on its own computers. This is another FY 1991 report recommendation the UAB continues to support.

NATIONAL AGRICULTURAL LIBRARY:
Fiscal year 1991 budget history and recommendations for fiscal year 1992

Dollars in Thousands

Program Activity	President's FY 1991 Budget Proposal	UAB FY 1991 Recommendations	FY 1991 Appropriation	President's FY 1992 Budget Proposal	UAB FY 1992 Recommendation
Specific funding levels were not recommended	15,773	18,773	16,798	17,453	17,453
TOTAL	**15,773**	**18,773**	**16,798**	**17,453**	**17,453**

Appendixes

I. Responsibilities and Structure of the Users Advisory Board

The National Agricultural Research and Extension Users Advisory Board (UAB) is a statutory committee established by the National Agricultural Research, Extension, and Teaching Policy Act of 1977, and reauthorized in the 1981, 1985, and 1990 Farm Bills.

The Board has the general responsibility for preparing independent advisory opinions on the food, agriculture, and natural resource sciences. Board members are responsible for:

- Reviewing policies, plans, and goals of research, teaching, and extension programs within USDA, other Federal agencies, State agencies, and colleges and universities.
- Assessing the extent of agricultural research, teaching, and extension activities conducted within the private sector and the nature of the private sector's relationship with federally supported agricultural science and education.
- Assessing adequacy of resource distribution and funding for research, teaching, and extension and make relative recommendations.
- Identifying emerging research, teaching, and extension issues.
- Recommending programs and technology transfer solutions for use by the public and private agricultural science and education.
- Making evaluations and recommendations in two annual reports.
- Serving as consultants to the President, Secretary of Agriculture, House and Senate Agriculture and Appropriation Committees.
- Briefing the Secretary orally on adequacy of resource distribution and future program and funding needs for research, extension, and teaching.

The Board's membership is purposely diverse so that a composite view can be formulated by those whom the programs are expected to benefit. The 21 members are selected to represent 16 categories of "users" of the national agricultural science and education system. The categories are:

(1) one member who is a producer representing farm cooperatives

(2) two members who are producers representing general farm organizations

(3) four members representing producers of agricultural commodities, forest products, and aquaculture products

(4) one member representing farm suppliers

(5) one member representing food and fiber processors

(6) one member representing animal health interests

(7) one member engaged in transportation of agricultural products

(8) one member representing labor organizations

(9) one member representing food marketing interests

(10) one member representing private nonprofit organizations and foundations involved in agricultural research, sustainable, agricultural research, education, and extension

(11) one member representing private sector organizations involved in development programs and issues in developing countries

(12) one member representing USDA agencies that do not have research capabilities

(13) one member engaged in rural development

(14) one member engaged in human nutrition work

(15) two members representing consumer interests, including one member who represents nonprofit consumer advocacy organizations

(16) one member representing nonprofit environmental protection organizations

II. Call for Comments

As members of the National Agricultural Research and Extension Users Advisory Board (UAB), we have spent many hours reviewing public and private sector programs, evaluating agricultural policies, and listening to the concerns of other users of research and extension services. We recognize that some of the issues raised probe sensitive areas. Nevertheless, many Federal and State administrators have provided solid responses to our inquiries.

Our objective is to provide recommendations which will promote an efficiently run and effective agricultural research and extension program. **The agricultural science system is sound; we urge that change be made where it is needed and that tradition be preserved when it serves best.**

We ask that policy makers carefully review our recommendations and discuss their merits with as many other users and performers of agricultural research and education as possible. All interested persons who wish to comment should contact:

Ms. Marshall Tarkington
Executive Secretary
Users Advisory Board
Room 432-A, Administration Bldg., USDA
14th & Independence Ave., S.W.
Washington, D.C. 20250-2200

III. Members of the National Agricultural Research and Extension Users Advisory Board, 1991

Ms. Jane Anderson
Chairman
Executive Director
California Beef Council
551 Foster City Blvd., Suite A
Foster City, California 94404

Dr. William G. Brundage
Vice Chairman
1616 Alvamar Drive
Lawrence, Kansas 66046

Mr. Joe Anderson
Route 1, Box 39
Potlatch, Idaho 83855

Mr. Turner Arant
Box B-1, RFD
Sunflower, Mississippi 38778

Ms. Mary Lou Chapman
9525 West 71st Avenue
Arvada, Colorado 80004

Mr. John C. Foltz
Administrator, FGIS/USDA
Room 1094
South Agriculture Bldg.
Independence Ave., S.W.
Washington, D.C. 20250

Mr. Harold Ford
Executive Vice President
S.E. Poultry & Egg Assoc.
1456 Church Street
Decatur, Georgia 30030

Mr. E. Thurman Gaskill
P.O. Box 155
Corwith, Iowa 50430

Ms. Camille Haney
ABRH Consulting
44 East Mifflin Street
Suite 303
Madison, Wisconsin 53703

Mr. Robert Havener
President, Winrock Intl.
Route 3, Box 376
Morrilton, Arkansas 72110

Mr. Walter Kates
Manager
Labor Relations Division
Florida Fruit & Veg. Assoc.
Box 140155
Orlando, Florida 32814-0155

Dr. James A. Kloek
Analytical Technological Division
B 49
Eastman Kodak Company
Rochester, New York 14652

Mr. Gil Koda
514 South Brawley
Fresno, California 93706

Mr. A. Lynn Lowe
25 Arnold Drive
Texarkana, Arkansas 75502

Dr. John T. Marvel
Vice President, Research
and Development
Ethyl Corporation
Box 14799
Baton Rouge, Louisiana 70898

Mr. John Mast
6237 CR 203
Millersburg, Ohio 44654

Mr. Allen L. Rouse
Route 2, Box 875
Salem, Missouri 65560

Mr. Joseph Stewart
Senior Vice President of
Corporate Affairs
Kellogg Company
One Kellogg Square
Battle Creek, Michigan 49016-3599

Dr. Samuel E. Strahm
1901 Grandview, Box 1256
Pawhuska, Oklahoma 74056

Ms. Jolene Vukasovich
Box 1388
Yuma, Arizona 85366

IV. Biographical Information

NATIONAL AGRICULTURAL RESEARCH AND EXTENSION USERS ADVISORY BOARD

JOE ANDERSON
Potlatch, Idaho

Joe Anderson has been president of Anderson Producers, Inc., since 1967. This family operation consists of a 2,285-acre farm growing wheat, barley, dry peas, lentils, and rapeseed; a custom cabinet and woodwork shop; and a farm computer consulting company. Mr. Anderson is currently director of the Idaho Rapeseed Association and of the U.S. Canola Association. He is past president of the University of Idaho Agricultural Consulting Council, and is a former CARET representative for his State. Mr. Anderson was honored with a Distinguished Service Award from Gamma Sigma Delta in 1987 for his contribution to Idaho agriculture. He earned a B.S. in agriculture from the University of Idaho, and later became a certified public accountant. Mr. Anderson represents the interests of agricultural commodity producers on the UAB.

TURNER ARANT
Sunflower, Mississippi

Turner Arant is president of Dyche Plantation, Inc., in Sunflower, Mississippi. He is one of the founders and former chairman of the board for the Delta Catfish Processors, the largest catfish processing plant in the world. Mr. Arant also helped organize the Farmers Grain Marketing Terminal, and now serves on the executive committee of this grain exporting company. He has received numerous awards for production of soybeans, cotton, rice, and catfish. Mr. Arant has been honored with the Mississippi State University Ag Alumni Award for Production Agriculture, and was named Mississippi Farmer of the Year in 1987. He has a B.S. in animal science from Mississippi State University. Mr. Arant represents the interests of food and fiber processors on the UAB.

WILLIAM BRUNDAGE
Lawrence, Kansas

Dr. Brundage is a microbiologist and biochemist with a doctorate from Louisiana State University. He is currently president of the Kansas Technology Enterprise Corporation (KTEC). KTEC is a quasi-state organization responsible for advanced technology economic development in the State of Kansas. Dr. Brundage both invests and manages investments in start-up companies, and is also involved in joint ventures with existing high-tech companies. He provides representation on the UAB for private, nonprofit organizations and foundations involved in agricultural research, sustainable agricultural research, education, and extension.

MARY LOU CHAPMAN
Arvada, Colorado

Before forming her own marketing and public affairs consulting company, Mary Lou Chapman was the Consumer, Food and Marketing Specialist for the Colorado Department of Agriculture; the Home Economist for the Colorado Wheat Administrative Committee; and an Assistant Extension Home Agent with the Colorado State University Extension Service. She is past president of the Denver Agricultural and Livestock Club, and is currently chairman of the Advisory Council to the Colorado State University Agricultural Science College and Food Editor for Colorado Country Life Magazine. Ms. Chapman was a creator of the Colorado Consumer Food Forum, Colorado Farmers' Market Program, and Colorado Farm-City Week Council. She represents consumer interests on the UAB.

JOHN C. FOLTZ
Washington, DC

John Foltz is administrator of the U.S. Department of Agriculture's Federal Grain Inspection Service. Nominated by President Bush in March, he was confirmed by the U.S. Senate in April 1990. He oversees all FGIS operations, including management of the national grain inspection and weighing system. Prior to this appointment, Mr. Foltz worked with both public and private sector agricultural organizations. He has served as executive director, Ohio Grain and Feed Association; chief of markets, Ohio Department of Agriculture; assistant administrator for market development with USDA's Foreign Agricultural Service; and deputy under-secretary of agriculture for legislative affairs. He has had a leadership role in many agricultural groups, including the Ohio Agricultural Council and the Ohio experiment station support council. He was a delegate to the National Council on Agricultural Research, Extension and Teaching and chaired the president's advisory board for Ohio State University. He received the OSU College of Agriculture distinguished service award and was named a "Friend of Extension" by Epsilon Sigma Phi, national Extension honorary. He earned both a B.S. and M.S. in agriculture from Ohio State University. Mr. Foltz represents USDA agencies without research capabilities on the Board.

HAROLD E. FORD
Decatur, Georgia

As Executive Vice President and CEO of the S.E. Poultry and Egg Association (SEP&EA), Harold Ford represents the interests of the largest poultry trade association in the world. SEP&EA has over 10,000 members, including producers, processors, marketers, equipment manufacturers, and others. Mr. Ford has received numerous honors; he was appointed as a delegate to the Agriculture and Food Economic

Conference by President Ford; and served as Assistant Commissioner of Agriculture for the State of Kentucky. He has a B.S. in agriculture from Murray University, and an M.S. in chemistry and dairy science from the University of Kentucky. Mr. Ford has spent much of his professional career in marketing positions, and represents food marketing interests on the Board.

E. THURMAN GASKILL
Corwith, Iowa

Thurman Gaskill operates a 1,120-acre grain and livestock farm that produces and finishes 1,000 hogs annually. He serves as director of the First Federal Savings and Loan in Storm Lake, Iowa, and is currently a commissioner with the Iowa Department of Natural Resources. Mr. Gaskill has served as chairman of the Iowa Corn Promotion Board, president of the Iowa and National Corn Growers Association, and chairman of the U.S. Feed Grains Council. He has served on many advisory councils, including the USDA Agricultural Policy Advisory Committee, the Agriculture Advisory Committee for Iowa State University, and the ISU Cooperative Extension Service Evaluation Task Force. In addition, he has served as vice chairman of the Governor's Agricultural Promotion Board, and as commissioner and vice chairman of the Iowa Development Commission. He has received numerous honors, including selection to the Agriculture Hall of Fame at Iowa State University. Mr. Gaskill represents the interests of agricultural commodity producers on the Board.

CAMILLE HANEY
Madison, Wisconsin

Camille Haney is president of Anderson, Benjamin, Read & Haney (ABRH Consulting), a consumer education and research firm. She is past president of the National Society of Consumer Affairs Professionals, and serves on the White House Consumer Advisory Council and the Board of the Council of Better Business Bureaus. She is a graduate of the University of Wisconsin-Madison, with a B.S. in retailing. Ms. Haney was White House Liaison to the National Alliance on Business, and has served on many advisory committees, including the National Commission on Jobs and Small Business and the FDA Commissioner's Advisory Panel. She produced a weekly television show on business and economic development, and is a member of numerous national and State business, consumer, and professional organizations. Ms. Haney represents consumer interests on the Board.

ROBERT HAVENER
Morrilton, Arkansas

Since 1985, Robert Havener has been president and CEO of the Winrock International Institute for Agricultural Development, an autonomous,

nonprofit organization whose mission is to reduce poverty and hunger in the world through sustainable agricultural and rural development. Through Winrock, he works with many of the leading public- and private-sector firms and institutions, universities, and associated groups throughout the world. Prior to his international development work, Mr. Havener served as a county agent and extension specialist with Ohio State University. From 1964 to 1985, he lived and worked in developing countries in Asia, Latin America, and the Middle East. Mr. Havener holds academic degrees in animal science and public administration. He represents private sector programs for developing countries on the Board.

WALTER B. KATES
Orlando, Florida

Walter Kates is manager of the Labor Relations Division of the Florida Fruit & Vegetable Association (FFVA). FFVA is a nonprofit agricultural association with members who grow vegetables, citrus, tropical fruit, and sugar cane in Florida. For over 16 years, Mr. Kates worked for the Florida Department of Labor and Employment Security in various positions involving the agricultural community. He has worked for FFVA since 1982, and has on several occasions given testimony regarding agricultural labor issues before Congress. Mr. Kates is a member of the Governor's Advisory Council on Farmworker Affairs, and has served on many committees, including the National Council of Agricultural Employers, National Job Service Employers Committee, and Florida Department of Labor Unemployment Compensation Advisory Council. He has also served on the Board of Directors of the East Coast Migrant Head Start Project. Mr. Kates represents agriculturally related labor organizations on the UAB.

JAMES A. KLOEK
Rochester, New York

Dr. James Kloek is assistant director of the Analytical Technology Division of the Eastman Kodak Company. During his career at both Kodak and the Monsanto Agriculture Company, he has been responsible for research programs directed to the discovery and development of both chemical and biological products useful for crop protection. Dr. Kloek has extensive knowledge of both the needs of growers for crop protection and the use of scientific processes to meet those needs. His expertise includes a working knowledge of biotechnology and its application to agriculture. In addition, he has broad experience in evaluating the environmental and toxicological significance of the use of crop protection agents. Dr. Kloek received his Ph.D. from Yale University, and did post-doctoral study at Stanford University. He represents the interests of farm suppliers on the Board.

GIL KODA
Fresno, California

Gil Koda has over 20 years' experience in agriculture, including the management of a diversified family farm operation. In addition, he is a managing partner in a large-scale farm enterprise with agricultural holdings exceeding 8,000 acres. Mr. Koda is currently the senior agribusiness advisor for NEDA Corporation, a business consulting company. In addition, he has worked as economic development consultant for Control Data Corporation and its subsidiary, Rural Ventures, Inc., where he was responsible for the management of rural economic development contracts in the Western United States. Mr. Koda represents rural development interests on the Board.

A. LYNN LOWE
Texarkana, Arkansas

Lynn Lowe is the owner and operator of a 1,600-acre farm in Arkansas, where he raises cotton, wheat, soybean, cattle, and grain sorghum. He has a B.S. in agricultural engineering from the University of Arkansas, and is a graduate of the Institute of Politics and Government at Arkansas College. Mr. Lowe has worked with numerous agricultural organizations, including the Arkansas Farm Bureau, Arkansas Rice Growers Association, Red River Compact, and Federal Land Bank Association of Texarkana. He has previously served as director for the Southwest Arkansas Electric Cooperative Corporation, vice chairman of the Red River Commission, and chairman of the Arkansas ASCS Committee. Mr. Lowe represents agricultural commodity producers on the UAB.

JOHN T. MARVEL
Baton Rouge, Louisiana

John "Jack" Marvel has over 20 years' experience in industry as a chief scientist with management responsibilities for domestic and international technological operations. Currently he is corporate vice president for research and development at the Ethyl Corporation. Before taking this position, he was general manager, science and technology-Europe and Africa, for Monsanto Company. As general manager of Monsanto's Agricultural Research Division, Dr. Marvel was involved in the groundbreaking development of biotechnological products; he directed EPA clearance for two major products. He has a Ph.D. in chemistry from the Massachusetts Institute of Technology, and was a post-doctoral fellow at the University of Arizona, where he was also an assistant professor of biochemistry. Dr. Marvel owns a farm in Illinois, and provides representation for agricultural commodity producers on the Board.

JON MAST
Millersburg, Ohio

Jon Mast is a partner in several family operated businesses, including Mastead Farms, Mast Associates, and Mastead East Farming Operations. He operates a 500-cow dairy farm in Ohio. He is currently president of the Ohio Council of Cooperatives, and has served on committees of numerous organizations, including the Northeast Ohio Breeders Association, Holmes County Agriculture Advisory Committee, and Central Ohio Breeders Association. He was director of the National Association of Animal Breeders in 1989. Mr. Mast studied dairy science at Ohio State University in Wooster and biology at Goshen College in Indiana. He represents the interests of farm cooperatives on the Board.

ALLEN L. ROUSE
Salem, Missouri

Allen Rouse is a retired fertilizer executive who formerly served as president and CEO of Terra International. In addition, he served on the Board of Directors and as treasurer for The Fertilizer Solutions Association; and is a past member of the board, chairman and vice chairman of the Fertilizer Institute. Mr. Rouse has a B.S. in chemical engineering from the University of Missouri at Rolla, and a masters in business administration from the University of Missouri at Kansas City. Prior to joining Terra International, he was vice president and general manager for Nitrogen Chemicals, Sohio Chemical Company. Mr. Rouse currently owns and operates a cattle ranch in Missouri, and represents the interests of general farm organizations on the UAB.

JOSEPH STEWART
Battle Creek, Michigan

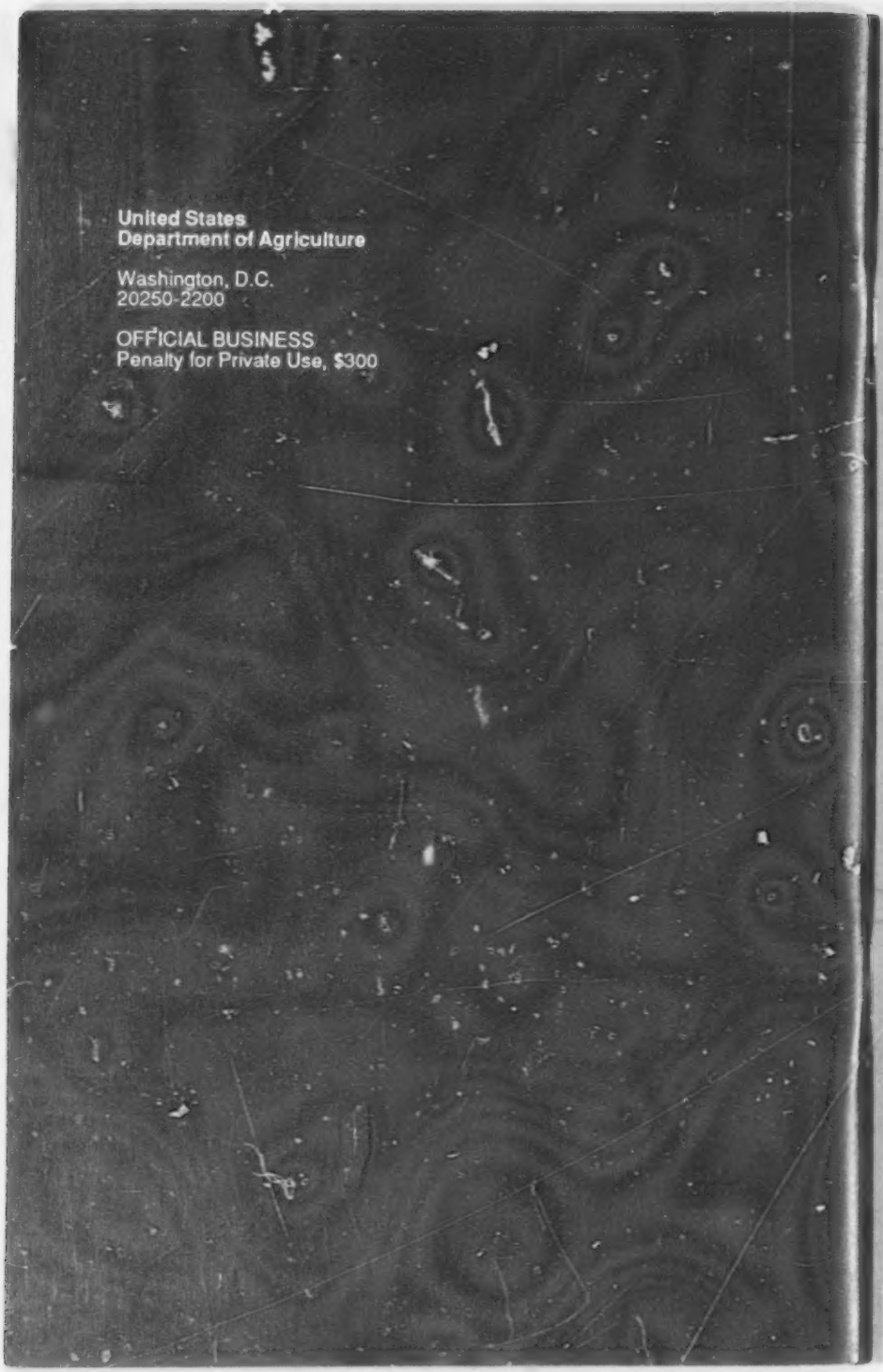
Joseph Stewart is senior vice president of corporate affairs for Kellogg Company. Prior to that, he was director of corporate communications for Kellogg. Mr. Stewart was hired by Kellogg as director of child nutrition programs in the U.S. Food Products Division in 1980. Previously, he served as director of food services for Howard University in Washington, DC, and for the DC public schools. In addition, he has served as State director for child nutrition programs for the District of Columbia. Mr. Stewart has a B.S. in foods and nutrition from Southern University in Baton Rouge, Louisiana. He is a member of the Industry Food Council to the American School Food Service Association, and serves on the Board of Directors for National Second Harvest and for Medical Education for South African Blacks (MESAB). Mr. Stewart represents human nutrition interests on the UAB.

SAMUEL E. STRAHM
Pawhuska, Oklahoma

Dr. Samuel Strahm practices veterinary medicine as a partner in a mixed practice at Osage Animal Clinics. He is past president of the American Veterinary Medical Association, the Oklahoma Veterinary Medical Association, the American Association of Veterinary State Boards, and many other organizations. He has been active in 4-H, and is a member of numerous veterinary, cattlemen's, and farm-related associations. Dr. Strahm was named Oklahoma Veterinarian of the Year in 1990, and received the AVMA Award for Distinguished Contributions to the Advancement of Veterinary Medical Organizations in 1985. He has B.S. and D.V.M. degrees from Kansas State University. Dr. Strahm represents animal health interests on the Board.

JOLENE VUKASOVICH
Yuma, Arizona

Since 1968, Jolene Vukasovich has been with Vukasovich, Inc., a company specializing in growing, packing, and shipping; and which also has oil and gas interests and cable TV interests. She supervises all company activities and conducts union negotiations. In addition, she performs general management duties for Bingham County Cable TV. Prior experience includes setting up transportation of shipments for Salinas Strawberries, a produce sales company in California. Ms. Vukasovich has been on the Yuma County Planning-Zoning Commission since 1987 and has served on the Board of Directors for the Yuma Vegetable Shippers Association, the Western Growers Association, and the California Iceberg Lettuce Commission. She was appointed by the governor to the Arizona Iceberg Lettuce Promotion Council in 1989, and elected chairperson for 1989-1990. Ms. Vukasovich has studied at Arizona State University and Arizona Western College. On the UAB she represents the interests of those involved in the transportation of food and agricultural products.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